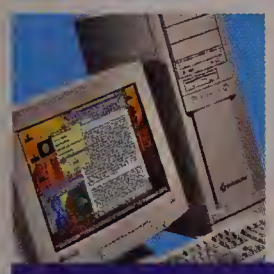
NEW HIGH-SPEED WAYS TO ACCESS THE NET PREVIEW! KEY PC TRENDS FOR '98

LATEST TOP 100 PCs, PRINTERS, AND MORE

PC WORLD

WWW.PCWORLD.COM

OCTOBER 1997



First Look! 300-MHz Pentium IIs
Hot, but Are They Worth the Price?

Protect Your Kids From Net Porn
We Rate the Top Screening Software

Top 2D and 3D Graphics Boards
Our Tests Reveal Surprising Results

PERFECT Your PC

Top PC **TUNE-UP TIPS** and **TRICKS**

Best **UTILITIES** and **SHAREWARE**

HOW TO FIX the Top Ten **BUGS**

BEST and Worst Software **SUPPORT**

How to **PROTECT** Your **DATA**

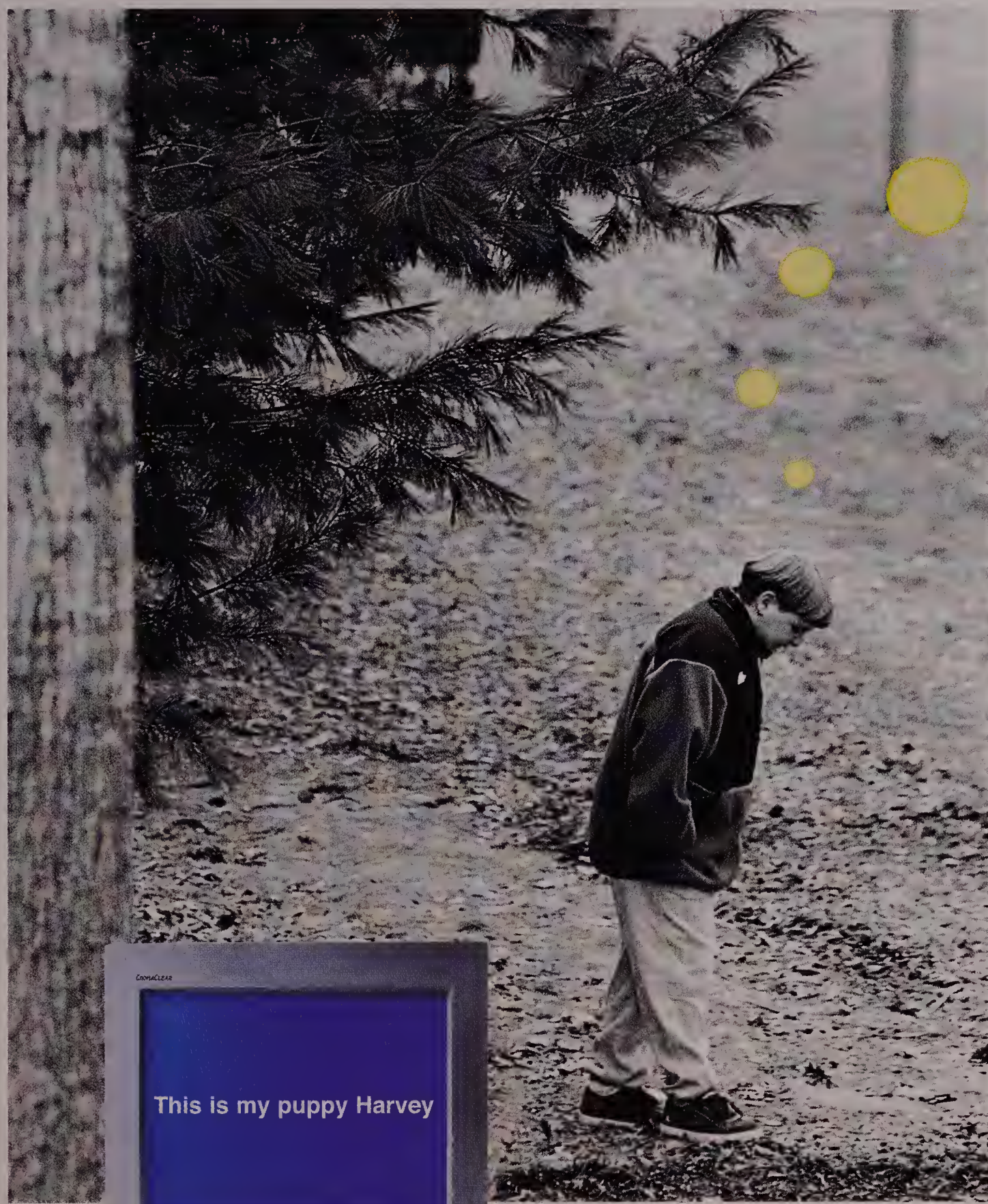
DIAGNOSE and **CURE** Sick PCs

$5.95 ◆ PRINTED IN USA

10>

0 70992 37771 8

PLUS *Step-By-Step Guide to Trouble-Free PCs*

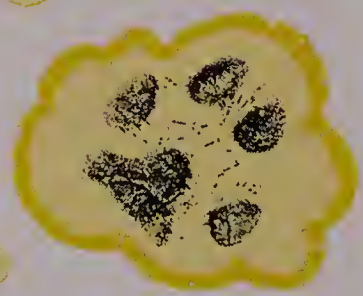


1 THIS IS CHRISTIAN.

He can see, hear, feel, touch, but he cannot speak. He was born with autistic tendencies that cut him off from the world around him.

Until he found this window.

MultiSync is a registered trademark and A500, A703, E500, E700, E1100, CromaClear and "Expect more. Experience more." mark and icon are trademarks of NEC Technologies, Inc. All other trademarks or registered trademarks are the property of their respective holders. ©1997 NEC Technologies, Inc.



2 A TEACHER DISCOVERED *that Christian would respond to images from his life. She put visual cues to the story of his new puppy on a special keyboard.*

3 THE MONITOR BECAME HIS VOICE. *With it he makes class reports and conversation. With it, Christian, 11, has been in the regular Osterville, MA public school since first grade.*

4 WITH THE PICTURES, HE MADE SENTENCES. *With the sentences, he made friends. Christian's monitor is the window between his non-verbal world and the speaking world of his friends. Through it, he teaches them many things.*

NEC MultiSync Monitors
E and A Series

THE MONITORS THAT ARE BEST FOR CHRISTIAN'S NEEDS *can also speak to yours. Introducing the NEC MultiSync® Enterprise and Advanced Series, the monitors for people looking for superior, lifelike images. And the monitors for people who want the kind of flexibility that super high resolutions and refresh rates ensure.*

OSM™ (On-Screen Manager) controls make image adjustments easy. Plus, select Enterprise monitors feature CROMACLEAR™ CRT, for unparalleled focus, contrast and intense color saturation. And, of course, the industry-leading NEC warranty includes 3 years parts, labor and CRT.

For more information on the new performance-driven MultiSync Enterprise and value-oriented Advanced Series call 1-800-NEC-INFO or visit www.nec.com.

MULTISYNC® MONITORS

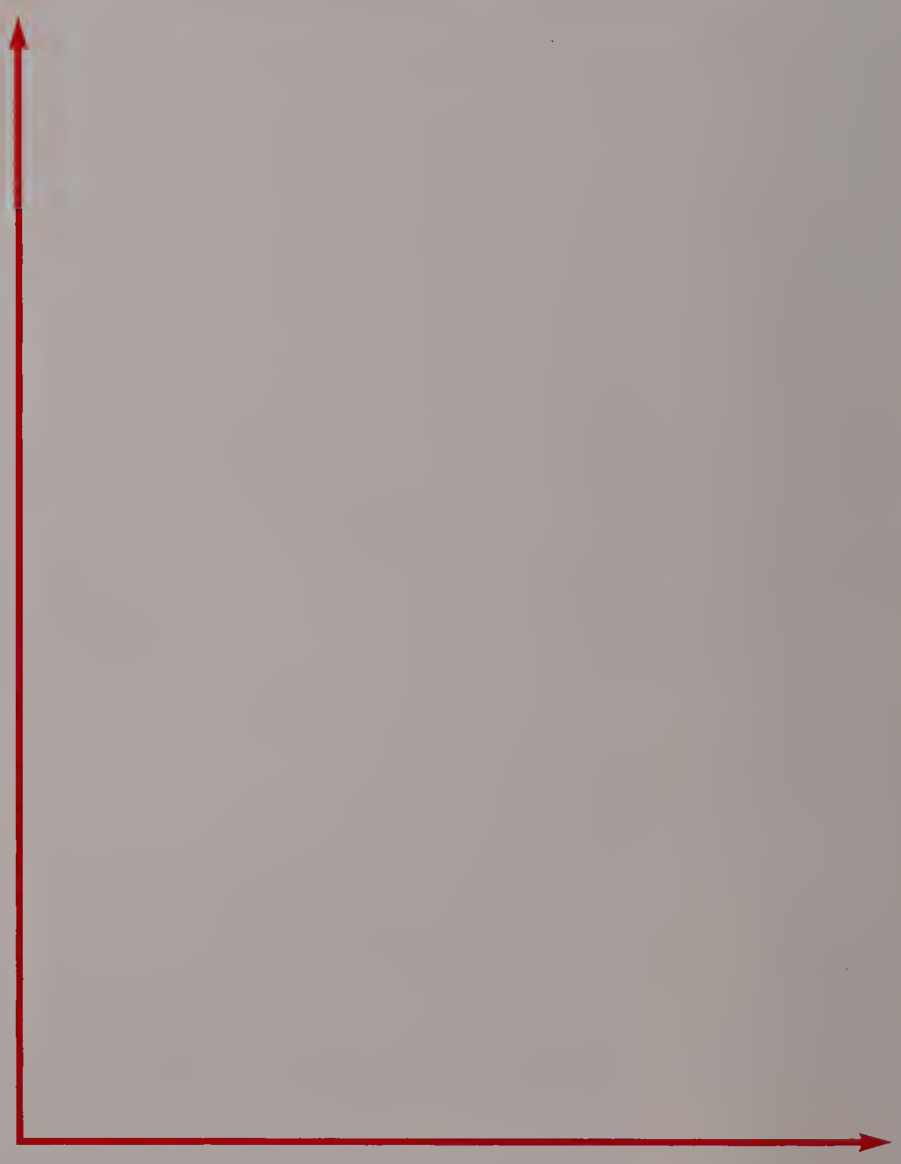
	Max Res	Bandwidth	CRT Type	Pitch
A500	1280 x 1024 @ 60Hz	112MHz	Dot Trio	0.28mm dot
A700	1280 x 1024 @ 65Hz	119MHz	Dot Trio	0.28mm dot
E500	1280 x 1024 @ 65Hz	119MHz	CROMACLEAR	0.25mm mask
E700	1600 x 1200 @ 65Hz	177MHz	CROMACLEAR	0.25mm mask
E1100	1600 x 1200 @ 65Hz	177MHz	Dot Trio	0.28mm dot

Expect more. Experience more.

NEC

Circle 205 on reader service card

Christian Murphy was non-verbal.
He lived with a wall between himself and the world.



It slices. It dices. Makes gorgeous

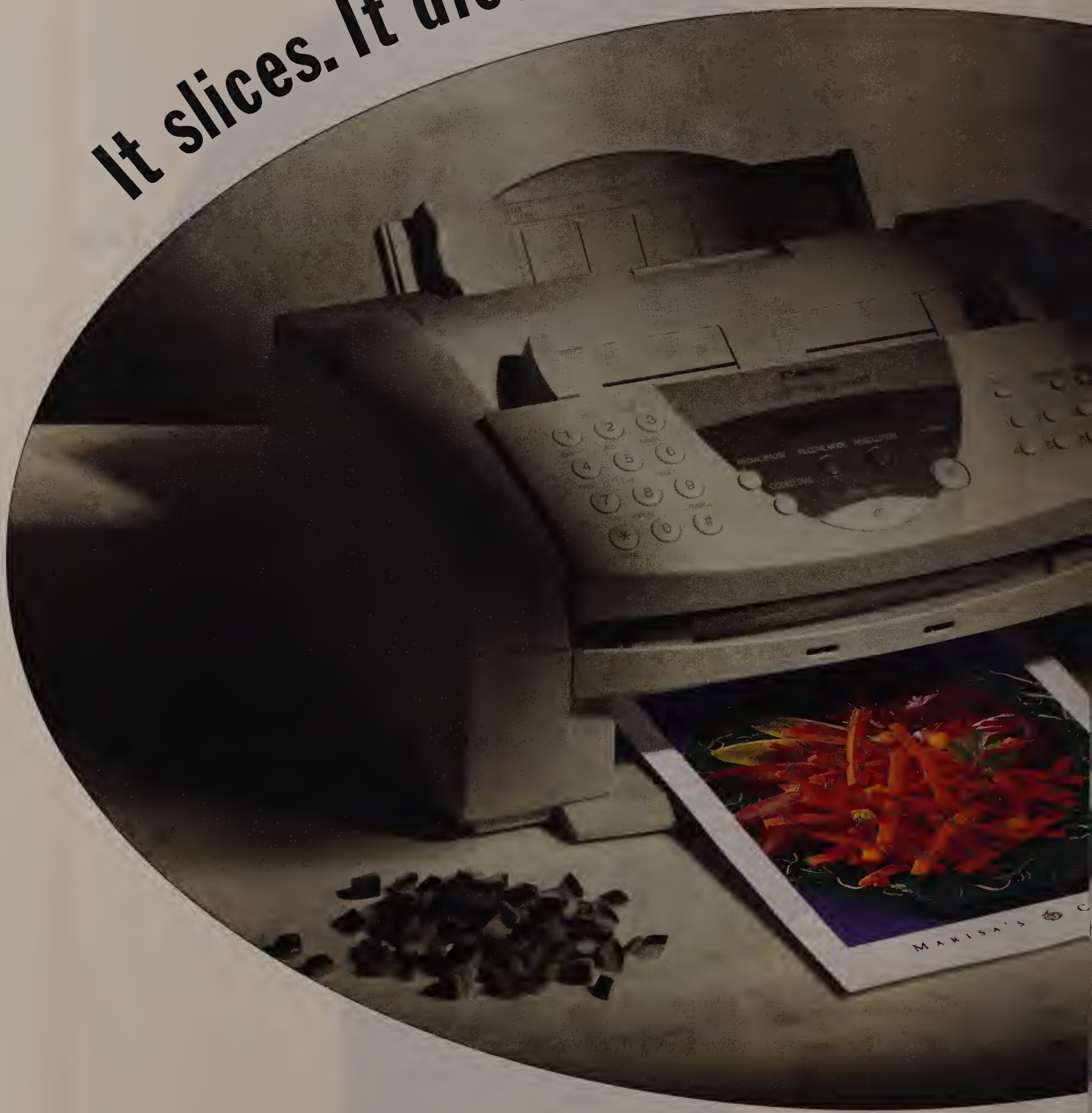


Photo Realism™

julienne carrots.

Meet photo-realistic color printing so real, you can taste it. Add in faxing, copying and scanning, all packed into one simple-to-use, space-age device, and you've got Canon's MultiPASS™ C3000.

Photo-realistic color printing.

For only $499.* With its optional Photo Kit, this is the only true photo-quality product of its kind. You get free TextBridge® Classic OCR and Canon Creative software,** your key to amazing results, featuring WebRecord™ Internet printing. Operators are standing by.

Plain paper faxing.

Crisp, convenient copying.

400 dpi grayscale scanning.

So call us at 1-800-848-4123 or visit www.ccsi.canon.com. Because now all your printing will be absolutely delicious. **See what we mean.™**

Canon

*Manufacturer's suggested retail price. Dealer prices may vary. **All software available on CD-ROM only and designed for use only with Windows® '95. © 1997 Canon Computer Systems, Inc. Canon is a registered trademark and MultiPASS, WebRecord, PhotoRealism and "See What We Mean" are trademarks of Canon Inc. In Canada, call 1-800-263-1121.

100 REASONS WHY

Word Processor Features	Corel® WordPerfect® 8	Microsoft® Word 97
Support for Intel MMX™ Technology	✔	no
Libraries		
Clipart	10,000+	3,000+
Photos	250	140+
Interface		
Shadow Cursor	✔	no
Tile documents vertically	✔	no
Reveal Codes	✔	no
Save workspace	✔	no
Search for any codes	✔	no
Application bar	✔	no
Context-sensitive property bars	42	13
Internet*		
Automatic natural language hyperlinks	✔	no
Corel Barista™ (for Java™ publishing)	✔	no
Java applets	✔	no
Formatting Tools		
QuickFonts™/font preview	✔	no
Spell check drop cap words	✔	no
Guidelines	✔	no
Font preview from drop-down list	✔	no
Styles can include text and graphics	✔	no
User-defined borders and fills	✔	no
Image rotation	✔	no
Parallel columns	✔	no
Captions on any side of image	✔	above and below
Make It Fit™ to expand documents	✔	no
Customizable Make It Fit options across multiple pages	6	none
Undo levels	300	100
Multiple character drop caps	50	1
Tables		
Row and column indicators	✔	no
Automatic data fill (QuickFill™)	✔	no
Format painter tables	✔	no
Automatic calculation	✔	no
Formulas function across tables	✔	no
Number of formulas	98	18
Long Documents		
Create new lists	✔	no
Expand/contract subdocuments individually	✔	no
Predefined document summary fields	51	27
Proofing Tools		
Combined Spell Checker/Thesaurus/Grammar	✔	no
Prompt-As-You-Go	✔	no
Document dictionaries and editable main dictionary	✔	no
Automatic sentence rewrite (PerfectSense™)	✔	no
SGML		
Import/export	✔	no
SGML editing and validation	✔	no
Document creation tools based on DTD	✔	no
Transitioning		
Backward compatibility	✔	no
Convert Corel WordPerfect for DOS macros	✔	no
Use existing Corel WordPerfect for Windows® macros	✔	no
Corel WordPerfect for DOS keyboards	✔	no
Convert Corel WordPerfect 6.x files	✔	import only

Available now! To buy Corel WordPerfect Suite 8, contact your local reseller.

Please visit our Web site for additional information.

*Internet connection required.
†CorelCENTRAL 8 is not included in the current release of Corel WordPerfect Suite 8. Customers will receive a voucher to obtain this application upon its release. Shipping and handling charges will apply.

Copyright © 1997 Corel Corporation. All rights reserved. Corel, WordPerfect, Quattro, Presentations, CorelCENTRAL, Corel Barista and the Corel balloon logo are trademarks or registered trademarks of Corel Corporation or Corel Corporation Limited. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel and MMX are trademarks or registered trademarks of Intel Corporation. Java is a trademark of Sun Microsystems, Inc. All other product, font and company names and logos are trademarks or registered trademarks of their respective companies.

www.corel.com/corelworld

Corel, Official World Title Sponsor of the COREL WTA TOUR

www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1383

KUR-0464-US

COREL® WORDPERFECT® SUITE 8

BEATS Microsoft® Office 97

Spreadsheet Features	Corel® Quattro® Pro 8	Microsoft® Excel 97
WYSIWYG editable view	✓	no
Cell reference checking	✓	no
QuickCell™	✓	no
Copy, cut, paste discontinuous ranges	✓	no
QuickCharacter™ insert	✓	no
Consolidation, budget and scenario experts	✓	no
Sort reuse list	✓	no
QuickType™ formulas	✓	no
Edit headers/footers onscreen	✓	no
WordPerfect (including tables) and Quicken	✓	no
Quattro® (WKQ/WQ2)/Quattro Pro Notebooks (WB2, WB3) imports	✓	no
Formula Composer™	✓	function wizard
Fit-As-You-Go™ (no '*****')	✓	limited
Core @functions	504	400

Presentation Features	Corel® Presentations™ 8	Microsoft® PowerPoint® 97
Support for Intel MMX™ technology	✓	no
Publish to Java (Corel Barista)	✓	no
QuickKeys keystroke actions (such as go to another slide, launch an application, play a sound, or even link to a URL)	✓	no
Add multiple slides simultaneously	✓	no
Import outlines into organization charts	✓	no
Customizable Background Gallery	✓	no
Slide navigation tabs	✓	no
Chart styles	✓	no
Range Highlighter used in datasheet	✓	no
Sort pie slices	✓	no
Separate drawing mode	✓	no
QuickWarp objects	✓	no
Blend objects together	✓	no
Place/Resize/Rotate chart	✓	no (must separate into objects)
Gradient fill (text and objects)	✓	objects only
Quick 3D any image	✓	drawing objects only
Slide transitions	120	41
Data chart functions (equations)	16	7

Communication Features	CorelCENTRAL™ 8†	Microsoft® Outlook 97
Create a "Planner" containing a calendar and multiple card files	✓	no
Built-in Mail Filters/Rules	✓	no
Add freeform notes to calendar	✓	no
Easily add custom fields to address book	✓	no
Schedule group events over the Internet	✓	no
Assign To Do items over the Internet	✓	no
Easily follow e-mail threads	✓	no
Compose content-rich HTML messages for assigned To Do items	✓	no
Type personal To Do items directly in list	✓	no
Use the Internet for long distance calls	✓	no
Edit address book entries in view mode	✓	no
Access Internet newsgroups and corporate discussion groups using mailbox interface	✓	no
Conduct and save a "live" chat session	✓	no
Click on hyperlinks to go to linked information	✓	no
Organize cards into groups	✓	no
Participate in collaborative Internet browsing	✓	no
Support for LDAP	✓	no
Surf the Internet using an integrated browser	✓	no
Create simple, flexible card files	✓	no
Link cards to documents or applications	✓	no
Have information "pushed" to you for instant access	✓	no

"WordPerfect . . . offers a wider selection of utilities in the box — and costs $200 less."

PC Computing, July 1997

PC WORLD

OCTOBER

VOLUME 15 ◆ NUMBER 10

135

COVER STORY

135 THE COMPLETE TROUBLESHOOTING GUIDE
Exorcise demons with this special section on keeping your PC up and running—from secrets for preventing and fixing problems to straight talk on software tech support.

136 HOW TO KEEP YOUR PC TROUBLE-FREE
HOW-TO Hate watching while your PC crashes or spits out error messages? Here are tips to keep disaster away—how to tune up your hard drive, set up PC maintenance, zap bugs, and find the best utilities, books, and online resources. Plus a handy card with your PC tune-up schedule.

138 Hard Disk Housekeeping
140 The Complete PC Toolbox
146 Keep Your PC Safe and Secure
151 Your PC Tune-Up Schedule

154 WANT GOOD SOFTWARE SUPPORT? GOOD LUCK...
CONSUMER ISSUES
We've seen it all: voice-mail mazes that put you on hold, ineffective FAQs that don't answer your questions, inexperienced support personnel who know less than you do. We made phone calls, sent e-mail, and culled through Web sites to check out the sorry state of tech support.

227

FEATURES

176 EVERYTHING YOU NEED TO RUN YOUR BUSINESS
REVIEW Businesses come in all shapes and sizes, but every one of them must manage time, money, and resources. Our experts pick the best software in five essential categories: accounting, business planning, contact management, project management, and human resources.

136

Additional material available on PC World Online: www.pcworld.com

203 2D AND 3D GRAPHICS BOARDS: YOU CAN'T ALWAYS GET WHAT YOU WANT
REVIEW Whether it's 2D for focusing on that 50-page report or 3D for handling heavy-duty graphics and games, we found that no single graphics board does it all. Here are the ones that work best, whether you're struggling with mammoth spreadsheets or monster 3D images.

SPECIAL REPORT

THE WEB AND YOU

227 THE WEB AT YOUR SERVICE
Think the Internet is just all marketing hype and self-promotion? We found four amateur Webmasters whose sites disseminate valuable information as a public service—from a cancer resource center for patients and their families to a site for getting the straight scoop from vets about your pets. Plus, tips for creating your own Web site.

COVER *Photograph by Robert Cardin; digital composition by Jeff Berlin*

ICONS: JEFFREY PELO

TOP OF THE NEWS

58 PENTIUM II-300: THE LATEST MAY NOT BE THE GREATEST
They're faster, but are they better buys? PII-300 PCs aren't that much faster than cheaper PII-266s. And the benefits of AGP aren't due till next year.

64 PENTIUM MMX-233 NOTEBOOKS BREAK SPEED RECORDS
Preproduction PMMX-233 notebooks from Gateway, NEC, and Quantex narrow the performance gap with desktops.

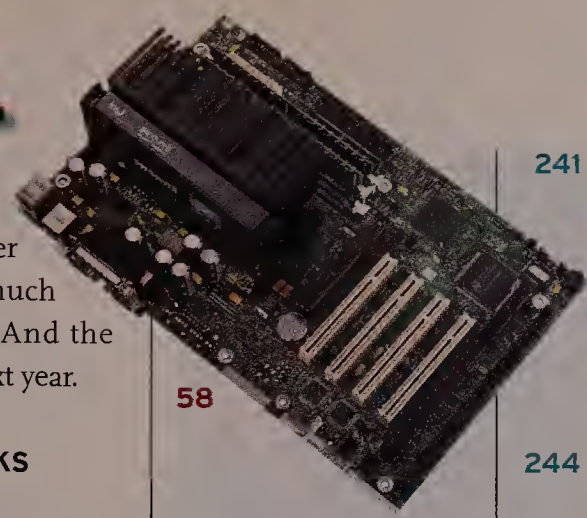
68 SATELLITE, RADIO, SUPER WIRELESS FOR HIGH-SPEED NET ACCESS
Web access options provide high bandwidth, competitive pricing, and fast installation—but they may not be in your neighborhood.

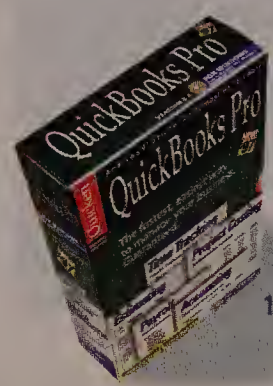
74 COMING PC TECHNOLOGIES: TECHNO-PARADISE OR MERE PUFFERY?
Ports that fix hardware and software conflicts, a true high-performance serial bus, PCs that alert you before problems occur—which technologies will be on your system?

78 INTERNET FILTERS: THE SMUT STOPS HERE. OR DOES IT?
Only two of the top Web filtering programs block sexually explicit material effectively.

NEW PRODUCTS

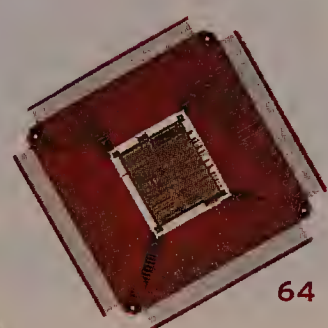
102 DirectWave MVP V C2-233 Cyrix-based PC
103 Digital HiNote Ultra 2000 notebook
104 Sony VAIO PCG-707C notebook
104 Seanix Baby Grand CS and TCO PCs
108 Alps MD-1000 ink jet printer
108 Diamond GyroMouse
110 AITech PC/TV AirLink
110 Diamond Maximum DVD Kit
114 Sony CPJ-D500 LCD projector
114 Number Nine Revolution 3D graphics card
118 QuarkXPress 4.0
122 Microsoft FrontPage 98
122 Symantec Visual Page
123 Adaptec Easy CD Creator Deluxe
126 Merriam-Webster's Collegiate Dictionary Deluxe
128 Adobe PhotoDeluxe 2.0
128 Corel Paradox 8


58



176

203


64

241

TOP 100

241 MMX PRICES PLUMMET
It's like Crazy Eddie is selling PCs. Price cuts on both desktops and notebooks mean sweet deals on MMX systems, including two PCs sporting Cyrix's brand-new 6x86MX Pentium II–class processor.

244 POWER DESKTOPS
TOP 20 Intel-based PCs hang tough on this chart, though the AMD K6–based Nova K6-200TX busts the monopoly with good performance and a $2499 price.

256 BUDGET DESKTOPS
TOP 20 Two Quantex PCs shine: The QP5/200 SM1 MMX wins a Best Buy, while the QP6/266 WS-3x just misses being the first 266-MHz Pentium II on the chart.

268 NOTEBOOKS
TOP 20 As systems like the CTX EzBook climb the chart due to price cuts, others like the $5199 NEC Versa 6200MX make you pay for their power and big screens.

RELIABILITY & SERVICE SURVEY

281 WIN A DELL DIMENSION PC
How satisfied are you with your PC? Fax in this survey for a chance to win a Dell Dimension M200a, a Best Buy PC.

283 PERSONAL PRINTERS
TOP 10 Canon releases a bumper crop of new printers and comes up with a blue-ribbon winner: the $199 BJC-4300 ink jet, our new number one color Best Buy.

287 15-INCH MONITORS
TOP 10 The Panasonic PanaSync Pro P15's clear display makes it our top monitor, and Mitsubishi's Diamond Scan 15VX jumps from number ten to number two.

289 GRAPHICS BOARDS
TOP 10 The best combination of 2D, 3D, and multimedia performance makes Best Buys out of ATI's 3D Pro Turbo PC2TV and Diamond's Stealth 3D 3000.

291 EXTERNAL MODEMS
TOP 10 3Com/U.S. Robotics tops both charts with the Courier V.Everything 33.6 and the Sportster 56K.

HERE'S HOW

330 ANSWER LINE
online Get the right video driver, speed up Windows 95's start-up and shutdown.

334 WINDOWS TIPS
online Find and remove files from unused programs; customize sound, wallpaper, and icons.

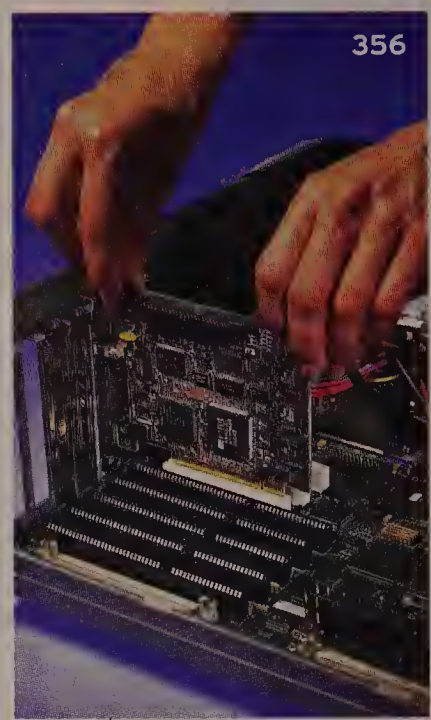
342 SPREADSHEETS
Delete empty Excel rows easily, bypass Lotus 1-2-3's splash screen.

344 WORD PROCESSING
online Clean up e-mail text in Word, split the screen to work on different parts of a document.

348 INTERNET TIPS
online Choose among all of Microsoft's e-mail programs, keep cookies out of your PC.

352 HARDWARE TIPS
Troubleshoot your laser printer, phase out obsolete ISA cards.

356 UPGRADE GUIDE
Install a CD-Recordable drive in your system, step by step.



@HOME

313 @HOME PRODUCTS
Easy photo scanning, getting your résumé on the Web, 30 discs of the Complete National Geographic.

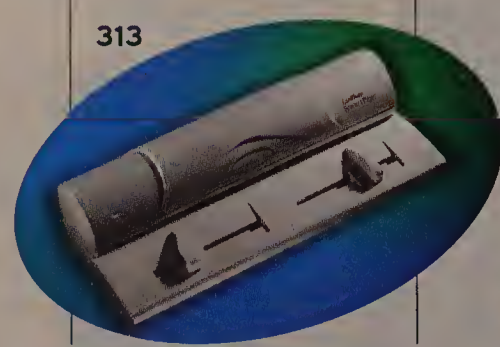
314 KEEPING UP
Web sites and services for consumers.

318 TOP 5 HOME PCS
Fast new PCs from Micron and Gateway try bu fail to knock off the num ber one Dell Dimensi XPS M233s.

320 HOME OFFICE
Steve Bass is ticked off at Microsoft.

RESOURCES

14 HOW TO CONTACT PC WORLD
358 MAIL-ORDER SHOPPING GUIDE
378 PC WORLD CATALOG
391 READER SERVICE CARD
393 ADVERTISER INDEX
396 EDITORIAL PRODUCT INDEX



DEPARTMENTS

19 UP FRONT Finding help for your PC when you need it the most.

25 LETTERS Readers sound off about deceitful marketing on the Web.

30 COMING UP

37 CONSUMER WATCH When big companies ignore the individual consumer, airing your grievances online can get them to listen.

45 PCW ADVOCATE Austin Computer goes AWOL, a Dell PC gets bounced, the Fine Print on software support.

49 REAL SOLUTIONS A better idea: using a videoconferencing service.

55 BUGS AND FIXES Servicing Office 97, updating SmartSuite 97.

400 FULL DISCLOSURE Manes talks to his PC. Is voice recognition finally here?

PCW ONLINE

SITES FOR SORE EYES
REVIEW Drowning in search sites that give you more than you've asked for? We identify the best search sites for sports, news, travel, and more.
www.pcworld.com/oct97/sites

BANKING IN YOUR BUNNY SLIPPERS
REVIEW Short of getting cash, you can do all of your banking from home—any time, any day. We look at home banking services, what they offer, and how they can affect your life.
www.pcworld.com/oct97/banking

STOCKBROKERS AT YOUR FINGERTIPS
REVIEW Online brokerage firms offer great convenience and real-time feedback that are unparalleled by traditional systems. Here's our take on the most important services.
www.pcworld.com/oct97/stocks

CAN'T GET ENOUGH OF WINDOWS 95?
HOW-TO Check out our one-stop browsing area containing everything you ever wanted to know about Windows 95: tips, tricks, patches, and even previews of Windows 98.
www.pcworld.com/win95

online **PC WORLD ONLINE**
www.pcworld.com

MICRON™ MILLENNIA® MME 200

Intel 200MHz Pentium® processor with MMX™ technology
512KB pipeline burst cache, flash BIOS
48MB EDO RAM
4GB Ultra ATA hard drive
24X EIDE variable speed CD-ROM drive
3.5" floppy drive
100MB Iomega Zip drive
32 voice wavetable stereo sound with speakers
USR Sportster 56K x2 internal data/fax modem*
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
17" Micron 17FGx, .26dp (16.0" display)
Tool-free minitower
Microsoft® Intellimouse™, 104-key keyboard
Microsoft Windows® 95 and MS® Plus!
Microsoft Office 97 Small Business Edition
Choice of Software Solutions Paks
5-year/3-year Micron Power℠ limited warranty

$2,299

MICRON TRANSPORT™ VLX 133

133MHz Pentium processor
Intel 430MX chipset
256KB L2 pipeline burst cache
24MB EDO DRAM
2.1GB hard drive
11.3" DSTN SVGA 800x600
8X CD-ROM drive
16-bit stereo sound
Built-in stereo speakers and microphone
Motorola Montana 33.6 fax/modem with cellular connector
128-bit graphics accelerator
Zoomed video-support
MPEG compatible
2 way infrared port
Touchpad pointing device
Modular floppy drive
Microsoft Windows 95 and MS Plus!
Microsoft Office 97 Small Business Edition
Management Pak
Custom nylon carrying case
5-year/1-year Micron limited warranty

$2,399

MICRON MILLENNIA XRU

Intel 266MHz Pentium II processor (features MMX technology)
512KB internal L2 cache, 2MB BIOS
64MB EDO RAM
4GB EIDE hard drive
24X EIDE variable speed CD-ROM drive
3.5" floppy drive
100MB Iomega Zip drive
32 voice wavetable stereo sound with speakers
USR Sportster 56K x2 internal data/fax modem*
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
17" Micron 700 FGx, .26dp (16.0" display)
USB Connection
Tool-free minitower
Microsoft Intellimouse,104-key keyboard
Microsoft Windows 95 and MS Plus!
Microsoft Office 97 Small Business Edition
Choice of Software Solutions Paks
5-yr/3-yr Micron Power limited warranty

$2,909

HP PRINTER OPTIONS

HP DeskJet 692c printer - photo-quality color printing for the home, complete with cable . . $319
HP LaserJet 6Lxi printer - affordable B&W printing, complete with cable $429

24-HOUR SHIPPING

*Same-day shipment is available for telephone or Internet credit card orders successfully booked by a Micron representative by 3:00pm MST, Monday through Friday. This service is available to customers who have received approved credit and have their Computers Now! system shipped to the "bill to" address on their credit card.

Extra Hot.

Heat things up with Computers Now®!

Order a Micron computer through our Computers Now! program for same-day shipment.* Our pre-configured systems are packed with Intel Pentium and Pentium II processors, some featuring MMX technology. Our Millennia XKU and MME models fire off power and performance for the most demanding user. And, our TransPort VLX delivers a portable that's affordable.

No matter which Micron system you choose, you'll always get our award-winning, 24-hour customer support and a great limited warranty you won't find on a shelf anywhere.

Call Computers Now! for a computer that turns up the heat — and really burns the other guys up.

MICRON POWER℠ WARRANTY

5-year limited warranty on microprocessor and main memory
3-year limited parts-only system warranty (1-year for TransPort VLX)
1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
30-day money back policy
24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

Designed for Microsoft® Windows®95

Micron Sales Hrs: Mon-Fri 6am-10pm, Sat 7am-5pm (MT) Technical Support Available 24 Hours A Day, 7 Days A Week
Toll free from Mexico: 95-800-708-1755
Toll free from Canada: 800-708-1758 • Toll free from Puerto Rico: 800-708-1756 • International Sales: 208-893-8970 • International Fax: 208-893-7393

*Maximum transmission speed of up to 56Kbs when downloading data and 33.6Kbs when uploading. However, actual performance is dependent upon numerous factors and observed transfer rates may be less than the maximum potentials.

Call now to order.
800-776-4506
www.micronpc.com

MICRON ELECTRONICS™

CONFIGURED FOR YOUR LIFE

©1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.

Circle 149 on reader service card

WE IMPROVED T
WE IMPROVED T
OF THE COMPUT
THEN WE IMPRO
COMPANY BEH
THE COMPUTER.

On July 10, Compaq introduced a new line of desktop computers and in doing so, introduced a radically new way of doing business. Because with our new Deskpro 2000 and 4000 models, we are moving to a Build-To-Order model. BTO means customers will be able to receive Compaq innovation, Compaq quality, and Compaq reliability at prices you never expected from Compaq.

Soon, we will be announcing BTO for all our products in addition to programs that deliver flexible configuration and customization. We have created a new model that incorporates the manufacturing efficiencies of the direct model with the value-added services and expertise of our 100,000+ reseller sales and support representatives.

From today on, everything we do will be driven by our strong passion to deliver the most satisfying ownership experience in the computer industry. For more information: www.compaq.com/products/desktops or 1-800-345-1518.

COMPAQ

©1997 Compaq Computer Corporation. All rights reserved. Compaq registered U.S. Patent and Trademark Office. Deskpro is a registered trademark of Compaq Computer Corporation.

HE COMPUTER.
HE DELIVERY
ER.
VED THE ENTIRE
ND

© Copyright 1997 Novell, Inc. All rights reserved. Novell is a registered trademark and Rock the Net and NDS are trademarks of Novell, Inc. in the United States and other countries.

IT'S NOT A GAME.

(It's a network.)

No matter how you spin it, we live in a networked world.

And no one knows networks like Novell.

We pioneered PC networking.

For over a decade we've been introducing technological innovations that have made the networking revolution possible—and the networking future attainable.

We're extending the power of existing networks and the return on existing investments. And we're creating unique solutions such as NDS™ for NT and Novell BorderManager—the industry's first integrated family of directory-based network services with centralized management, improved performance and enhanced security for the link between the corporate intranet and the public Internet.

Networks will continue to get bigger, faster and more complex.

They'll link more users on more platforms to more resources in more places. Much of this enabled by the Internet, the network of networks.

But that's the point: They're all networks.

And Novell has the tools and technologies to help you win the networking game.

www.novell.com

Novell®

PC WORLD

EDITORIAL

EDITORIAL DIRECTOR Philip Lemmons
EDITOR IN CHIEF Cathryn Baskin
MANAGING EDITOR Luis Camus
ART DIRECTOR Robert Kanes
EXECUTIVE EDITORS Eric Bender, Tracey Capen, Charles Piller, Daniel Tynan
SENIOR NEWS EDITOR Bill Snyder
SENIOR REVIEWS EDITOR Carla Thornton
SENIOR TECHNICAL EDITOR Karl Koessel
SENIOR @HOME EDITOR Christina Wood
EAST COAST EDITOR Randy Ross

ASSISTANT MANAGING EDITOR Anne Kandra
SENIOR ASSOCIATE EDITORS Yardena Arar, Michael Desmond, Rex Farrance, Brad Grimes, Bryan Hastings, Ann Kremers, Michael S. Lasky, Harry McCracken, Laurianne McLaughlin, Scott Spanbauer, Lincoln Spector

ASSOCIATE EDITORS Melissa Riofrio, JoAnne Robb, Karen Silver
TECHNICAL EDITOR Shane Rau
STAFF EDITORS Angela Freeman, Aoife M. McEvoy
ASSISTANT EDITOR Grace Aquino
EDITORIAL RESEARCHER Julie Campagna
EDITORIAL ASSISTANT Mick Lockey

COPY CHIEF Kimberly Stein
SENIOR COPY EDITORS Barbara Lewis, Marla Miyashiro
COPY EDITORS Stephen Compton, Lorraine Fry, Kim Saccio-Kent
EDITORIAL PRODUCTION ASSOCIATE Henry Pham

ASSISTANT TO EDITORIAL DIRECTOR Linda L. Grubbs
ADMINISTRATIVE ASSISTANTS Yvette Joplin, Kalaivani Murugesan

BUSINESS MANAGER Heidi Anderson

ART AND DESIGN

ASSOCIATE ART DIRECTORS Barbara Adamson, Tim J Luddy
SENIOR DESIGNERS Kate Godfrey, Carolyn Perot
SENIOR DESIGNER, INFOGRAPHICS Michael Jantze
DESIGNER Beth Kamoroff
ASSISTANT DESIGNER, INFOGRAPHICS Robin Briskin
PRODUCTION ARTIST Marlene Tobias

CONTRIBUTING EDITORS

Steve Bass, George Campbell, Scott Dunn, Roberta Furger, Judy Heim, Stephen Manes, James A. Martin, Brian McWilliams, Stan Miastkowski, Celeste Robinson, Richard Scoville, Scott Spanbauer, Kirk Steers, John Walkenbach

PC WORLD TEST CENTER

TEST CENTER DIRECTOR Julian Milenbach
MANAGER, PERFORMANCE TESTING Ulrike Diehlmann
MANAGER, BENCHMARK DEVELOPMENT William L. Rinko-Gay
PERFORMANCE ANALYSTS Robert P. James, Elliott S. Kirschling, Jeffrey Kuta, Mike Salayko
TEST CENTER COORDINATORS Andrew Hawn, Julian Weatherby

PCW ONLINE

EDITOR IN CHIEF Russell Glitman
MANAGING EDITOR Rebecca Freed
EXECUTIVE EDITOR, TIPWORLD Jim Welp
SENIOR EDITOR Yael Li-Ron
INTERACTIVE SERVICES EDITOR Dennis Sheridan
NEW MEDIA EDITOR Tracy Swedlow
STAFF EDITORS Paul Heltzel, Glenn McDonald, Amy Ng
DIRECTOR, PRODUCTION & TECHNOLOGY Nancy H. Miller
DIRECTOR, PRODUCT DEVELOPMENT Adam Block
DESIGN MANAGER Grace Woo
OPERATIONS MANAGER Carla Lieberman
PRODUCT MANAGER David Harpe
SENIOR PRODUCER Licia Slimon
PRODUCERS Eugene Brenwasser, Jill Corral, Michael Fitzgerald
CONTENT ENGINEER Nick Van Cleve
APPLICATIONS DEVELOPER Matt Turner
MULTIMEDIA DEVELOPMENT MANAGER Martyne Pagé
PRODUCT DEVELOPMENT MANAGER Susanna Camp
PRODUCT DEVELOPMENT ASSOCIATES Laura Koetzle, Hao Quach
PRODUCT DEVELOPMENT INTERN Alison Doerner
FLUEGELMAN INTERN Lisa Moskowitz

USER GROUP BOARD

Steve Bass, Pasadena IBM Users Group; Roger Bender, Microcomputer Managers Association; Jack Bolton, Atlanta PC User's Group (APCUG); Brian Camenker, Boston Computer Society; Rollie Cole, APCUG; Mary Dolce, Chicago Computer Society; Sandy Frunzi, Las Vegas PC User Group (LVPCUG); Al Harrison, Houston Area League PC Users; David Hoffman, NYPC; Joseph Rigo, NYPC; Robert Rodrigue, MicroLink PC User Group; Kenny Wynn, LVPCUG

PCW COMMUNICATIONS

PRESIDENT AND CHIEF EXECUTIVE OFFICER Richard J. Marino
PUBLISHER, PC WORLD ONLINE Thomas Gewecke
VP AND ASSOCIATE PUBLISHER Jeff Edman
VP AND CHIEF FINANCIAL OFFICER Vicki Peilen
VP, CIRCULATION Shawne Burke Pecar
VP, HUMAN RESOURCES Richard Willoughby
VP, MANUFACTURING Linda Manes Goodwin
VP, RESEARCH Cheryl Brink

FOUNDER David Bunnell
FOUNDING EDITOR Andrew Fluegelman

HOW TO CONTACT PC WORLD

SUBSCRIPTION SERVICES

PC World Subscriber Services, P.O. Box 55029, Boulder, CO 80322-5029
INTERNET: www.pcworld.com/resources/subscribe/customer_service/
E-MAIL: pcwhelp@neodata.com
PHONE: In U.S. other than CO 800/234-3498
In CO and outside U.S. 303/604-1465
New orders 800/825-7595

MAIL AND ONLINE

PC World Editorial, 501 Second St. #600, San Francisco, CA 94107
PHONE: 415/243-0500 **FAX:** 415/442-1891
AMERICA ONLINE: keyword pc world
COMPUSERVE: go pcworld
WORLD WIDE WEB: www.pcworld.com
E-MAIL: letters@pcworld.com

QUESTIONS AND SUBMISSIONS

Send material electronically to the appropriate online address listed at right or mail it to *PC World*. Include your name, city, and state in all correspondence. We reserve the right to edit letters. *PC World* pays $50 for published *Here's How* tips and questions; accepted submissions acknowledged by payment. Please note that editors cannot guarantee personal responses to all questions.

ANSWER LINE: answer@pcworld.com
BUGS AND FIXES: bugs@pcworld.com
CONSUMER WATCH: consumerwatch@pcworld.com
FULL DISCLOSURE: smanes@ix.netcom.com
HARDWARE TIPS: kirk_steers@pcworld.com
HOME OFFICE: steve_bass@pcworld.com
INTERNET TIPS: judy_heim@pcworld.com
LETTERS: letters@pcworld.com
PCW ADVOCATE: advocate@pcworld.com
REAL SOLUTIONS: real_solutions@pcworld.com; 415/978-3212; 415/442-1891 (fax, Attn: *Real Solutions*)
PC World pays $300 per published column.
SPREADSHEETS: john@j-walk.com
UPGRADE GUIDE: stan_miastkowski@pcworld.com
WINDOWS TIPS: pcwsdunn@aol.com
WORD PROCESSING: george_campbell@pcworld.com

NEW PRODUCT ANNOUNCEMENTS

Please address press releases to *New Products* at *PC World*, or call 415/978-3212.

REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from *PC World*. Write to *PC World*, Reprints and Permissions, 501 Second St. #600, San Francisco, CA 94107; include a phone number. To order reprints of your company's editorial coverage in *PC World*, call 612/582-3810.

BACK ISSUES

PC World issues and article copies are available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 800/521-0600.

MAILING LISTS

Occasionally we make our subscribers' names available to other companies whose products may interest you. To have your name excluded from these mailings, send a request with your mailing label to Subscriber Services, P.O. Box 55029, Boulder, CO 80322-5029.

The side you show the world is up to you.

A psychiatrist would have a field day analyzing the two personalities inside the Monte Carlo® Z34®. On the outside it's sophisticated indulgence in steel. A magnet for gawkers. But on the inside, inspired by years of NASCAR championships, lies a 3800 Series II 200-hp V6 just waiting for someone to let it out of its cage.

Monte Carlo.

The side you show the world is up to you.

To learn more, call 1-800-950-2438.

Monte Carlo Z34 Genuine Chevrolet

www.chevrolet.com ©1997 GM Corp. Buckle up, America!

Come see what we did with 2 more inches.

refresh rate

sony+25%=EO90

sony 17sell $899 esp

$849 esp

physical pixels

viewsonic+68%=EO90

viewsonic pt775 $899 esp

$849 esp

display area

nec+34%=EO90

nec p750 $899 esp

$849 esp

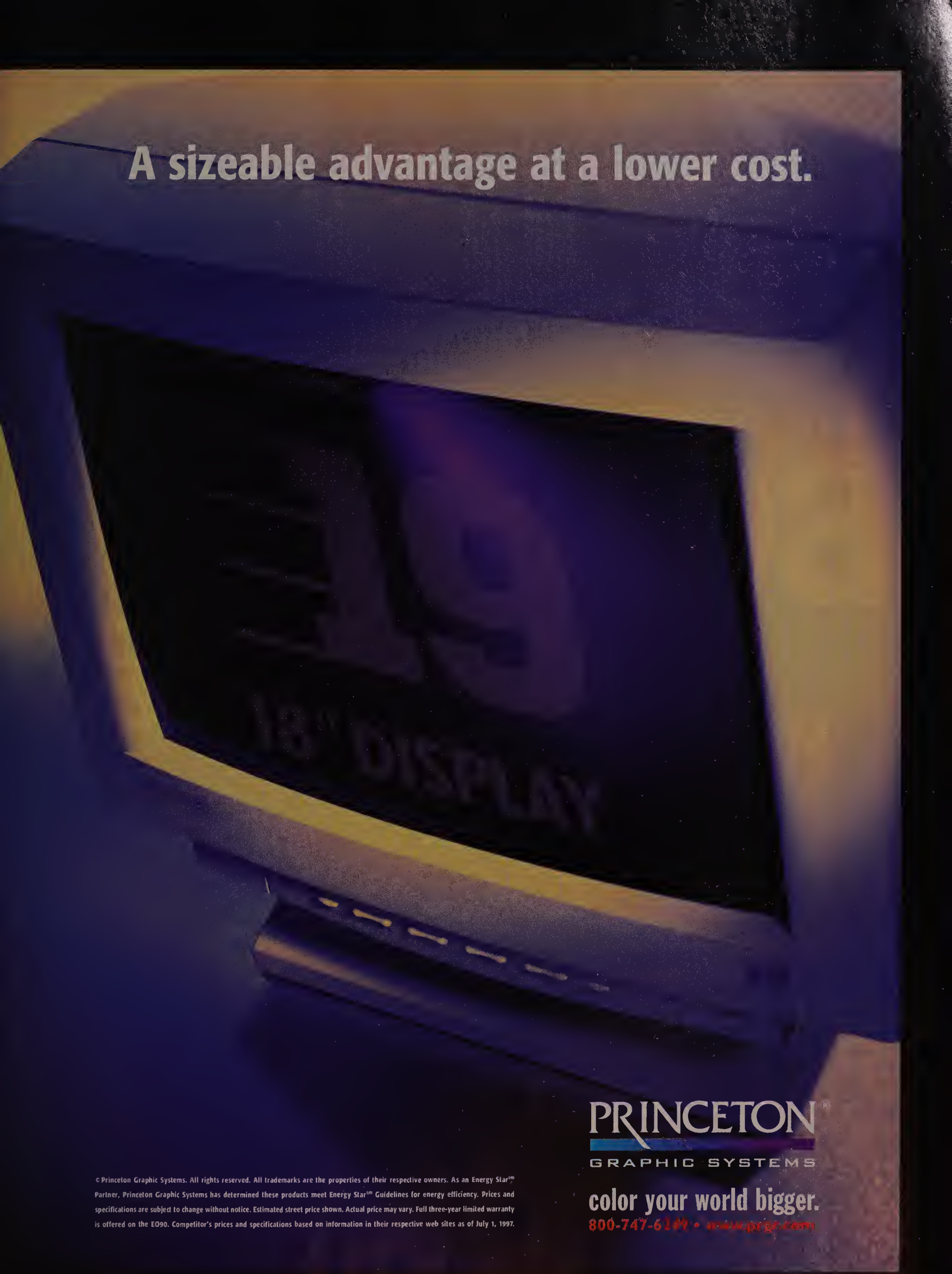
19 18" DISPLAY

The big plus = big value.

The big plus in monitors is here. Keeping our tradition of bringing more performance for less money Princeton Graphic Systems brings you the EO90. The EO90 delivers more monitor for your money. More physical pixels than Viewsonic's pt775, more windows space than NEC's p750 and faster refresh rates than Sony's 17sell. And all of this for a lower price!

Experience the EO90's sizeable performance first-hand. Visit your nearest Princeton Ultimate Reseller for a demonstration – and see a whole new dimension in monitors.

A sizeable advantage at a lower cost.



PRINCETON®
GRAPHIC SYSTEMS

color your world bigger.
800-747-6149 • www.prgr.com

© Princeton Graphic Systems. All rights reserved. All trademarks are the properties of their respective owners. As an Energy Star℠ Partner, Princeton Graphic Systems has determined these products meet Energy Star℠ Guidelines for energy efficiency. Prices and specifications are subject to change without notice. Estimated street price shown. Actual price may vary. Full three-year limited warranty is offered on the EO90. Competitor's prices and specifications based on information in their respective web sites as of July 1, 1997.

Circle 151 on reader service card

SCSI for your desktop.

BONE rattling throughput.

Do more. Faster.

Connect to a

SCSI hard drive.

To get the most out of your PC, you've got to get the most through it. Which is why you need to connect to a SCSI (pronounced scuzzy) hard drive with the world's most popular SCSI card from Adaptec.® Together, they give you pipe-opening 40MB/sec maximum throughput. Considerably more than the 16.7MB/sec in standard-issue PCs. So applications launch faster. Documents save faster. And you get the full benefits of true multi-tasking. Ask for SCSI on your next PC. And watch it kick up some dirt.

SCSI makes you more productive.

2.8MB/sec	Without SCSI
6.3MB/sec	With SCSI

Hard Disk Average Throughput.†

To see the proof, visit www.adaptec.com/dt/pcw.*

We move the information that moves your world.™

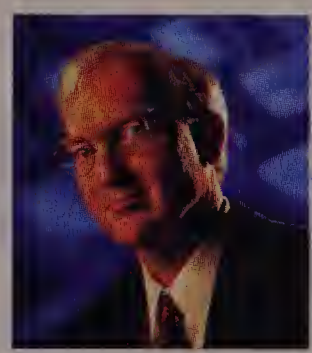
adaptec®

*For information by fax, dial 1-408-957-7150. Request document no. 11460. †SCSI drive: Western Digital WDE2170 with Adaptec AHA®-2940UW SCSI card. EIDE drive: Seagate ST52520A. Dell Pentium Pro 200 PCI, 32MB RAM. Intel chip set 82371SB PCI bus master IDE controller, Windows NT® Workstation 4.0, ATI graphics accelerator Mach 64, Adaptec Threadmark™ benchmark 2.0. ©1997 Adaptec, Inc. All rights reserved. Adaptec, Threadmark, AHA, the Adaptec logo and tagline are trademarks of Adaptec, Inc. and may be registered in some jurisdictions. Windows NT is a trademark of Microsoft Corporation, used under license. All other trademarks belong to their respective owners. Always drive responsibly.

Where's Help When You Need It?

COMPARED TO TELEPHONES, PCs are still hard to use. That's because telephones perform a single task, while PCs can be programmed to do anything. The more versatile the device, the more elusive the goal of ease of use. The user interface for a jack-of-all-trades like the PC must let programmers adapt the machine to numerous unforeseen and unforeseeable tasks—yet remain understandable to the layperson. Under the circumstances, it's nothing short of miraculous that PCs are far easier to use than alternatives such as terminals. (New products like network computers will be as complex as the number of tasks they're asked to perform—and the difficulty of their user interface will be no different from that of PCs performing comparable tasks.)

The urge to simplify suggests that what the world really needs is a separate device for each task. Of course, each device would cost $200 to $500. And you'd face little problems like arranging your office to accommodate separate machines for word processing, spreadsheets, databases, e-mail, Web browsing, scheduling, business graphics, and so on. To exchange information, the devices would need a network. And since each device would have a different user interface tailored to its own application, you would have to learn many interfaces. No matter how simple the software on each device, you would soon find yourself staying up all night trying to invent something very much like the PC. If you succeeded, you would accumulate wealth beyond your wildest dreams—just like those who played important roles in the early years of the PC industry.



Corel seeks a **competitive** edge in **keeping** and motivating **skilled** technicians to do its **support.**

EVEN THE EXPERIENCED NEED HELP

NOT THAT THE TRIUMPH of a versatile device like the PC reduces the complexity of using it. Regardless of education, IQ, or computing experience, most of us often find ourselves stumped about how to force the PC to do something we need done. For example, I'm convinced that in Freelance Graphics, there must be a better way to manipulate the data behind the charts, but I've never found the solution. For the past week, I've been trying to find the missing color box in Windows Paint. My 3-year-old daughter has somehow caused this essential menu to vanish in such a way that even uninstalling and reinstalling the application won't restore it. (Why was I so foolish as to send an innocent little girl into the jaws of Windows Paint? Because my 6-year-old son was using Orly's Draw-a-Story on another machine.) Were it not for a thousand futile experiments and an accidental right-click, I would never have figured out how to change the color of the ceiling in Broderbund's 3D Home Interiors. My wife says she could have repainted our entire living room in the time it took me to do the ceiling in the simulated version. And while I'm confessing my sins, I might as well admit that several Excel functions know far more about how to manipulate me than I do about how to manipulate them.

TECH SUPPORT TO THE RESCUE?

IN SHORT, IF YOU'RE anything like me, abandon your dream of mastering the PC. Seek help early and often. You'll find it almost everywhere: in help menus, tips articles, how-to columns, tech support CD-ROMs, online forums and newsgroups, vendor voice-mail labyrinths, self-help Web sites, and on and on. More often than not, you'll probably still need to talk to someone on the phone because you'll find no ready answer to the mystery baffling you. To learn the ins and outs of pursuing technical support for your software, read Naomi Wise's "Want Good Tech Support? Good Luck..." Wise reports on how Corel, Intuit, Lotus, Microsoft, Netscape, and Symantec fared at answering *PC World*'s technical questions, how free help compares to what you pay for, and how online help compares to what's available over the phone. You may not be pleased by the facts about technical support today, but you'll be better prepared to get the help you need after reading Wise's article. You'll peek behind the curtains of a major tech support operation, arm yourself with 11 tips for getting better software support, and latch on to a number of other valuable aids.

Through the gloom shines a ray of hope. Most software companies are contracting out their technical support to control costs. This suggests that they attach little importance to supporting the people who buy their complex products. Corel, on the other hand, is seeking a competitive edge by keeping experienced technicians on the job and motivating them to satisfy customers like you. Though Corel's support is by no means perfect, that's worth remembering the next time you buy software.

Phil Lemmons is editorial director of PC World. ■

PHOTOGRAPH: ERIK BUTLER

Unreal 233 MHz prices from a real company.

Call Now: 800-468-1242

- **WinBook XL- 233 MHz Intel® Pentium® Processor with MMX™ Technology, running at 1.8V**
- *12.1" SVGA Active Matrix Display (add $400 for 13.3" display)*
- *32 MB EDO DRAM*
- *3 GB Hard Drive*
- *45-Watt Hour Lithium Ion Smart Battery*
- *256K Syncburst L2 Cache*
- *3.5" Floppy Drive and 20x/8x variable CD-ROM both built-in*
- *Integrated dual-button pointing stick and touchpad, both active simultaneously*
- *16-Bit Stereo Audio*
- *Two Type II or one Type III PCMCIA Slot*
- *PCI Graphics Accelerator w/2 MB DRAM*
- *Parallel, Serial, PS/2, VGA, 2-way Infrared port, TV out*
- *One-year extendible warranty*
- *Microsoft Windows® 95 installed*

MMX™ intel inside pentium® PROCESSOR

$3599 *Add $400 for a 13.3" screen*

- **WinBook FX- 166 MHz Intel® Pentium® Processor with MMX™ Technology, running at 2.5V**
- *12.1" SVGA Active Matrix Display*
- *32 MB EDO DRAM*
- *2.16 GB removable Hard Drive*
- *59-Watt Hour Lithium Ion Battery*
- *256K Syncburst L2 Cache*
- *33.6 Internal Fax/Data Modem*
- *Options Bay accepts CD-ROM, 3.5" floppy drive (both included) or optional 2nd battery*
- *Integrated dual-button pointing stick, optional touchpad*
- *16-Bit Stereo Audio*
- *One Type II/III & one Type II PCMCIA Slot*
- *PCI Graphics Accelerator*
- *Parallel, Serial, PS/2, VGA, and one 2-way Infrared port*
- *One-year extendible warranty*
- *Microsoft Windows® 95 installed*

$2999 *Add $199 for an extra battery or $219 for a Mini Dock*

- **WinBook XP5 Pro- 150 MHz Intel® Pentium® Processor with MMX™ Technology, running at 2.5V**
- *12.1" SVGA DSTN Color Display*
- *16 MB EDO DRAM*
- *1 GB removable Hard Drive*
- *40-Watt Hour Lithium Ion Battery*
- *256K Syncburst L2 Cache*
- *Options Bay accepts 3.5" Floppy Drive and CD-ROM (both included) or optional 2nd Battery*
- *Integrated dual-button pointing stick, optional touchpad,*
- *16-Bit Stereo Audio*
- *Two Type II or one Type III PCMCIA Slot*
- *PCI Graphics Accelerator*
- *Parallel, Serial, PS/2, VGA and one 2-way Infrared port*
- *One-year extendible warranty*
- *Microsoft Windows® 95 installed*

$1999 *Add $600 for a 11.3" Active Display, 32MB RAM 1.4 GB HDD, 33.6 Fax/Data Modem*

With over 125 industry awards in the last 4 years and a history of outstanding product reviews from the leading computer publications, WinBook is a proven innovator in notebook computer design. In fact, notebook computers are all we make. Combine this with our outstanding reputation with programmers, MIS professionals and technical experts in the field and you'll understand why we say that WinBook computers are *"Critically Proven."*

To prove it for yourself call today.

Mon-Fri 8am-9pm EST Sat 9am-4pm EST

U.S. sales only. 30-day unconditional money-back guarantee from date of purchase.

800-468-1242

WinBook®

Critically Proven.

Designed for Microsoft Windows 95

©1997 WinBook Computer Corporation. All rights reserved. WinBook is a registered trademark of Micro Electronics, Inc. The Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of the Intel Corporation. All other trademarks and registered trademarks are property of their respective corporations. All prices and specifications are subject to change without notice or obligation. Prices do not include shipping.

Circle 254 on reader service card

Model	G773	P775
CRT Screen Size	17" (16.0" viewable)	17" (16.0" viewable)
Dot Pitch	0.26mm	0.25mm
Maximum Resolution	1,280 x 1,024	1,600 x 1,280
Recommended Resolution	1,024 x 768 @ 87Hz	1,280 x 1,024 @ 88Hz

Introducing SuperClear.™ A monitor with an image so clear we had to trademark it.

SuperClear. It's the latest advancement in screen performance and, not surprisingly, it comes from ViewSonic®, the biggest company in display technology and the leader in the 17" (various viewable) market.

The focus is on clarity.

The .26mm dot pitch G773 17" (16.0" viewable) monitor sets new standards for image clarity. The reason is our SuperClear screen—ViewSonic's latest engineering breakthrough that combines the exceptional focus found in high contrast conventional CRTs with the bright, vivid colors associated with aperture grille CRT monitors. The result: Absolutely the clearest, brightest images and most vivid colors available on a 17" (various viewable) monitor. At any price. Period.

More specs, more selections, more solutions.

The G773, with 1,024 x 768 resolution at 87Hz, is perfect for general business, home and the internet. If your work requires even higher resolutions, we're also introducing the P775 17" (16.0" viewable) monitor for CAD/CAM, document imaging and prepress applications. This new monitor offers an eye-popping 1,280 x 1,024 resolution at an amazing 88Hz refresh rate.

Keeping an eye on the environment.

And, in keeping with ViewSonic's commitment to environmental concerns, both the G773 and P775 meet strict TCO '95 standards which reduce heat emissions, lower power consumption and mandate the use of recyclable parts. Compliance to TCO certification ensures that our monitors are environmentally and ecologically friendly.

To fully appreciate the clear advantages of the G773 and P775 though, you really need to see them in person.

For the dealer nearest you, call ViewSonic at (800) 888-8583 ask for agent 7857, or visit our website at: www.viewsonic.com

ViewSonic®
See The Difference!®

(909) 869-7976 Fax: (909) 869-7958 • Internet: www.viewsonic.com
Specifications subject to change without notice • Copyright © 1997 ViewSonic Corporation, all rights reserved.
Corporate names and trademarks stated herein are the property of their respective companies.

Circle 224 on reader service card

HEWLETT® PACKARD

The right paper can save more than your letters.

Introducing a full line of paper. Works with your HP LaserJet printer. Extra wh heavy weight. Designed specifically for the task of printing. Give yo lette reason to jump. Call 1-800-471-4701 for a free samp e p* o d near you. www.ljsupplies.com/save

HP PAPER · ALWAYS CLEAR, ALWAYS

YOUR TAKE ON: Spam e-mail ◆ Web deceit ◆ Online advertorials

WE HATE SPAM

YOUR AUGUST *Top of the News* article on the bulk e-mail problem ("Spam Attack: Get Ready for the Bulk E-Mail Deluge") claims that legislating against spam raises "thorny free-speech issues." In fact it does no such thing.

The sending of unsolicited bulk e-mail is wrong because the sender is making unauthorized use of the recipient's hard disk space and Internet resources. It is wrong because, unlike other forms of advertising, it forces the recipient to pay the bulk of the cost for its delivery. It is wrong because it can crowd out legitimate e-mail communication. Finally, it is wrong because it threatens free speech on the Internet by making users unwilling or unable to participate in it.

We don't need an outright ban, only a law saying bulk e-mailers must assume that no one wants their e-mail except those who explicitly say they do.

Far from limiting free speech, the elimination of spam is probably the most important step we can take to protect free speech on the Internet.

Mark Roberts, Rochester, New York

EVERY MONTH I READ countless stories about spam and about the number one producer of this Internet by-product—Cyber Promotions.

I just checked my e-mail and found 50-plus copies of a message from submit-king@web3.cybermirror1.com. My first mistake was to reply with "remove" in the subject line. This resulted in my getting *ten* more copies of the message.

I went to the WHOIS database on the InterNIC site, where people can find who owns specific domains on the Net, and looked up the owner of cybermirror1.com. I was not surprised to find the domain registered to Cyber Promotions.

My solution to this pesky problem: to forward each and every piece of spam I receive to domreg@cyberpromotions. I figure as long as I have to deal with the cyber–junk mail, they should, too.

Julie Lemish, Chicago

IN ALL THE TALK about "junk" e-mail, I think that the real issue is not what gets sent to us, but how much work we must do to determine whether we want to read or delete it.

A suggestion I heard recently makes sense: Require all advertising e-mail to show the word "advertisement" in the subject field. This is similar to quality magazines labeling ads that look like articles as advertisements or special advertising supplements.

Masked e-mail sources are simply fraud and should be outlawed. I should be able to identify the source of an item and block any e-mail source I choose. I should be able to remove myself from any list I wish. Anyone who does not comply with such a request is harassing me and should be subject to penalties for doing so.

Unsolicited advertising is one of the prices we pay for living in an open society. However, requiring a little no-cost consideration from the sender can go a long way toward making it less of a burden.

Ed Anderson, Syosset, New York ▶

HOT BUTTON

Sex, Lies, and the World Wide Web

I AM WRITING in response to the inclusion of SmithKline Beecham's Café Herpé site in "Web of Deceit" [August]. I realize the article intended to inform readers that things are not always what they seem on the Web, but I do not believe that "deceit" applies to SKB. This apparently is an informative Web site, and the fact that visitors would be "hard-pressed to find any mention that the site's sponsor manufactures the product it's endorsing" is a positive sign to me. At least SKB is not pushing the product.

As a health-care professional in training, I applaud SKB for recognizing the Internet's value to inform people about their options in obtaining treatment. Multiple ways of obtaining information (especially in the privacy of one's own home) leads to better-informed patients, who can play a more aggressive role in their own health care.

John Hoffman, Savannah

IN FERN CHAPMAN'S article "Web of Deceit," Janice Norton speaks with apparent distaste when she says, "The Web started with defense, math, and science people. And now marketers have taken over."

Well, I'm sorry Janice, but the largest consumer of computer power is business. Is Janice, or anyone else, really so disappointed that private enterprise has a new tool with which to do its job? Is billions of dollars flowing into the economy directly because of the Net a bad thing, to be mourned as these antibusiness folks seem to be doing? Where on earth did this idea come from that commerce is bad? If that's not what these people are trying to say, why is it such a strong undercurrent in their writings?

Eric Florack, Rochester, New York

WITH ALL THE attention your magazine has given to the issue of Web sites' collecting marketing information from visitors without disclosure, I thought I'd share my simple solution to this problem: I lie.

I lie about my age, sex, income, marital status, sexual preference, and any other inane piece of personal information that a site requests. If more users did this, marketers couldn't trust the information they collected, and they might stop asking. So, if you're sick of this practice, fire up your browser and spread as much personal disinformation as you can.

Darren Fuerst, Windsor, Ontario

ILLUSTRATION: JAMES YANG

HEWLETT® PACKARD

©1997 Hewlett-Packard Company

i was here

One small step for man. One giant leap for the printed page.

HP LaserJet Toner Cartridges. Low cost per page. Lifetime guarantee. A crisp, sharp landing for each and every letter. Don't compromise your mission with anything less. www.ljsupplies.com/leap

HP PLANET PARTNERS
LaserJet Toner Cartridge Recycling Program

HP LASERJET TONER CARTRIDGES · ALWAYS CLEAR, ALWAYS SHARP

DUMB DIGERATI

IN THE AUGUST issue, Phil Lemmons [Up Front] asks "How Dumb Are the Digerati?" Well, I guess I am a dumb bozo, since I've no idea what the "digital elite" is. (Is that like people with T3 lines running to their bedrooms?) In any event, I read the proposed American Society of Magazine Editors guidelines (whose eight points seek to keep advertising and editorial in online publications distinct and separate), and think they sound reasonable. It's good to see the ASME making an attempt to police its own. Still, I might suggest adding a ninth item to that list. Ask all "advertorial" sites to include the following HTML code: <P><H1>Yet another<I><B> self-serving opinion. </B></I></H1></P>. You might not need the other eight items then.

Jim Lentz, Internet

SOFTWARE MISDIAGNOSIS

IN YOUR AUGUST *@Home* section, Naomi Wise criticizes Home Medical Advisor and Mosby's Medical Encyclopedia for not giving "in-depth medical advice." I doubt that any medical software could (or should) perform such a task. What company's legal department would allow a product to give specific medical advice? The legal risks would be staggering. The best the user of home medical software can hope for is the kind of information already being provided: factual, not diagnostic. For help with a specific problem, see your physician, not your PC.

William Gembal, Seattle

THEMES HIJACKED

WHOA! I DIDN'T READ "Best Free Stuff Online" [May], but did see July *Letters*, in which A. J. of AJ's Desktop Themes Web site makes it clear he thinks that just because he spends time altering other people's work, *he* should get the credit. As a photographer, I find this pervasive mentality distressing. The fact is, any original work is the sole intellectual property of the creator. A. J. can spend 30 minutes, 30 days, or 30 years "modifying" other people's desktop themes, and they will still belong to those people.

Braden Walters, Regina, Saskatchewan

DELUGE OF DELL

IN THE AUGUST issue, I noticed an overwhelming amount of Dell advertising. I counted five full two-page and two one-page Dell ads. That is 12 pages of Dell advertisements, not including the back cover foldout. I then read over your Top 20 listings. The first three computers on the Top 20 Power Desktops chart are Dells. The top two computers on the Top 20 Budget Desktops are Dells. You also rated the Dell Latitude number one on your Top 20 Notebook PCs! What the heck is going on here? I understand that you need computer manufacturers to advertise in your magazine, but this seems excessive.

Ryan Jones, Reno, Nevada

Editor's response: Your question is understandable, but we can tell you there is absolutely no connection between ad sales and editorial. In fact, *PC World* sales reps are enjoined from talking to editors about anything editorial. We take the separation of "church and state" very seriously here.

As for Dell's grip on the top of the charts, that is in large part a result of readers' satisfaction with Dell. We do many reader surveys, and they've said clearly that a PC's reliability and a vendor's service and support are very important. So we weight those factors heavily in our Top 100 calculations. Dell, it turns out, is one of the few companies that consistently scores Best in our fax-back Reliability and Service survey results (the form appears in every issue).

For more information on how the Top 20 works, read "Your Guide to the Top 100," which appears every month in the Top 100 introduction. If you have suggestions on how to make the Top 100 more useful, please send them to us. –Tracey Capen ▶

CORRECTIONS AND CLARIFICATIONS

IN "THE BEST PRODUCTS OF 1997" (July), a World Class runner-up award for Best Application Environment went to Microsoft Exchange Server 4.1 for NT. The version number should have been 5.0.

In *New Products* (September), the URL for PC-cillin HouseCall should have been listed as housecall.antivirus.com.

PC World regrets the errors.

When the end comes, send your toner cartridge to a better place.

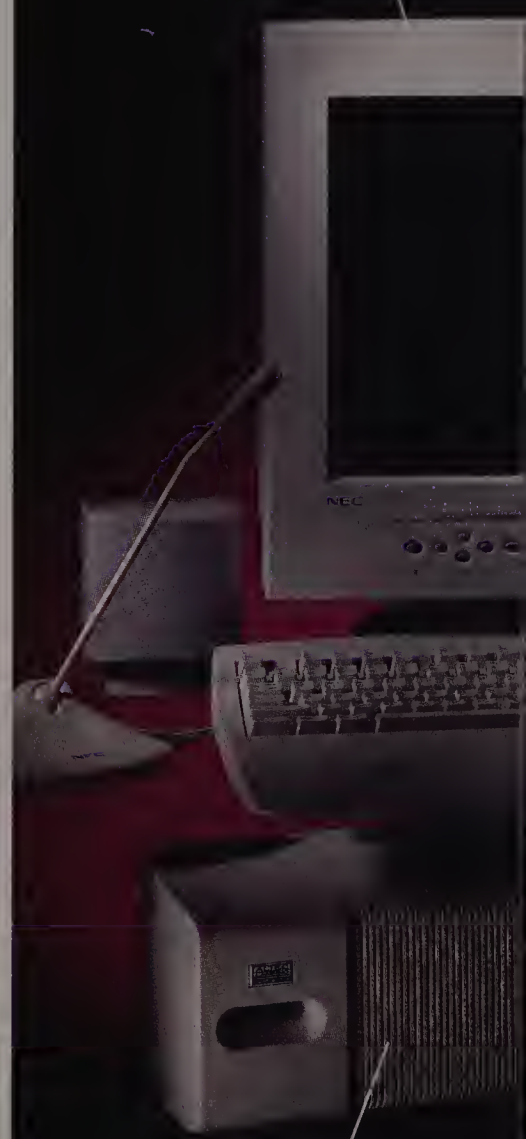
It lived a long healthy life. It worked hard for you. Now's your chance to bid it a proper farewell. Introducing HP's Planet Partners—an easy, free recycling solution. Returned HP cartridges are converted into raw materials to be used in the manufacturing of everyday products. Packages and postage are provided for any quantity. Call 1-800-340-2445 for details. After all, why trash your old toner cartridges when you can give them eternal life?

www.ljsupplies.com/planetpartners

HEWLETT® PACKARD

It does things computers weren't able to do back in 1997.

NEC monitor with sharp color and high resolution. Available in a 15" (14" v.i.s.) or 17" (16" v.i.s.) screen.



Introducing NEC Direction™ PCs.
The latest in cutting edge technology from NEC.

The new Direction PC from NEC isn't merely ahead of most computers. It's ahead of its time. In fact, it represents the next phase in the PC evolution. Which isn't surprising when you consider that NEC introduced the first color laptop and the first high availability workgroup servers. So call NEC NOW℠ and talk to a knowledgeable System Consultant who can help you design the Direction system that best suits your needs. We'll even give you the choice of working with a highly qualified NEC reseller partner. See why, in an industry where people struggle to stay current, NEC offers a more appealing option. Staying ahead.

Why NEC NOW?

- The security of partnering with a company known for its technological innovations.
- The flexibility of ordering direct or through a reseller.
- The expertise of System Consultants.
- The immediate availability of competitively priced products.
- The resources of one of the world's largest computer companies.

NEC NOW

MMX™ intel inside pentium® PROCESSOR

Wavetable audio system provides clearest sound available.

©1997 NEC Computer Systems Division, Packard Bell NEC, Inc. NEC, Versa, and MultiSync are registered trademarks; VersaBay, A700, C700, C500, ESM, PortBar, MiniDock and Express5800 are trademarks, and UltraCare is a service mark of NEC Corporation, all used under license by Packard Bell NEC, Inc. Direction, VersaNote, VersaExec, and MagicEye are trademarks and NEC NOW is a service mark of Packard Bell NEC, Inc. Leasing based on typical 36-month lease with purchase option. Other lease options may be available, leasing arranged by third party leasing company to qualified customers. Prices do not include shipping or applicable sales tax, are valid in the US only and are subject to change without notice. Products and specifications are subject to change without notice. *Product is 56Kbps capable. However, due to FCC rules which restrict power output of the service providers' modems, current download speeds are limited to approximately 53Kbps. Actual speed may vary depending on line conditions. MS, IntelliMouse, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. NetWare and Novell are registered trademarks of Novell, Inc. The Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. All other trademarks and registered trademarks are property of their respective owners.

BUILT TO ORDER

NEC Direction PCs *A new direction in cutting edge technology.*

Common Features: Mini-Tower or Desktop Tool-Less Chassis • 24X max CD-ROM • 3.5" Floppy Drive • Microsoft® Windows® 95 • MS® Office 97 SBE • 2 USB Ports • Microphone • Palmrest Keyboard and MS IntelliMouse® • 3-Year Limited Warranty with 1-Year On-Site Service • *DirecPC Satellite Dishes are Now Available as Upgrades on all Direction Systems*

Direction SPT233

- 233MHz Pentium processor with MMX™ technology/512KB L2 Pipeline Burst Cache
- 7.0GB Ultra DMA Hard Drive/32MB SDRAM
- Number Nine PCI Revolution 3D, 4MB WRAM
- Altec® ACS-45 Speakers/AWE32 Wavetable Audio
- Iomega® Zip Drive
- U.S. Robotics® 56Kbps* Data/Fax/Voice Modem
- NEC C700™ 17" Monitor (16" v.i.s.)

* Upgrade to NEC MultiSync® A700™ 17" Monitor (15.6" v.i.s.), add $229

* Upgrade to 64MB SDRAM, add $199

$2649

Business Lease: $95/mo.

Direction SPT233

- 233MHz Pentium processor with MMX technology/512KB L2 Pipeline Burst Cache
- 4.3GB Ultra DMA Hard Drive/32MB SDRAM
- Number Nine PCI Revolution 3D, 4MB WRAM
- Altec ACS-45 Speakers/AWE32 Wavetable Audio
- NEC C700 17" Monitor (16" v.i.s.)

* Upgrade to Altec ACS-410 Speakers with ACS-251 Subwoofer, add $69

* Optional U.S. Robotics 56Kbps* Data/Fax/Voice Modem, add $119

$2379

Business Lease: $86/mo.

Direction SPT233

- 233MHz Pentium processor with MMX technology/512KB L2 Pipeline Burst Cache
- 4.3GB Ultra DMA Hard Drive/32MB SDRAM
- 4MB SGRAM PCI Graphics Card
- Altec ACS-45 Speakers/Integrated Yamaha Sound
- NEC C550 15" Monitor (14" v.i.s.)

* Upgrade to NEC C700 17" Monitor (16" v.i.s.), add $199

* Upgrade to AWE32 Wavetable Audio, add $49

$1949

Business Lease: $70/mo.

Direction SPT200

- 200MHz Pentium processor with MMX technology/512KB L2 Pipeline Burst Cache
- 3.2GB Ultra DMA Hard Drive/32MB SDRAM
- 4MB SGRAM PCI Graphics Card
- Altec ACS-90 Speakers/Integrated Yamaha Sound
- NEC C550 15" Monitor (14" v.i.s.)

* Upgrade to NEC C700 17" Monitor (16" v.i.s.), add $199

* Upgrade to Iomega Zip Drive, add $99

$1789

Business Lease: $64/mo.

Direction SPL300

- 300MHz Pentium II processor with MMX technology/512KB Integrated L2 Cache
- ATX Motherboard with 440LX Chip Set
- 9.0GB SCSI Hard Drive/64MB SDRAM
- Number Nine AGP Revolution 3D, 4MB WRAM
- Altec ACS-90 Speakers/Integrated Yamaha Sound
- Adaptec 2040UW SCSI Controller
- Iomega Zip Drive
- NEC C700 17" Monitor (16" v.i.s.)
- MS Windows NT® 4.0

* Upgrade to 128MB SDRAM, add $379

* Upgrade Video Memory to 8MB WRAM, add $119

$4229

Business Lease: $148/mo.

Direction SPL300

- 300MHz Pentium II processor with MMX technology/512KB Integrated L2 Cache
- ATX Motherboard with 440LX Chip Set
- 6.4GB Ultra DMA Hard Drive, 9.5ms/64MB SDRAM
- Number Nine AGP Revolution 3D, 8MB WRAM
- Altec ACS-45 Speakers/Wavetable Audio
- U.S. Robotics 56Kbps* Data/Fax/Voice Modem
- Iomega Zip Drive
- NEC C700 17" Monitor (16" v.i.s.)

* Upgrade to Altec ACS-410 Speakers with ACS-251 Subwoofer, add $69

* Upgrade to NEC MultiSync A700 17" Monitor (15.6" v.i.s.), add $229

$3499

Business Lease: $126/mo.

Direction SPL300

- 300MHz Pentium II processor with MMX technology/512KB Integrated L2 Cache
- ATX Motherboard with 440LX Chip Set
- 7.0GB Ultra DMA Hard Drive/64MB SDRAM
- 4MB SGRAM AGP Graphics Card
- Altec ACS-90 Speakers/Wavetable Audio
- NEC C700 17" Monitor (16" v.i.s.)

* Upgrade to Number Nine AGP Revolution 3D, 4MB WRAM, add $219

* Upgrade to Iomega Zip Drive, add $99

$2949

Business Lease: $106/mo.

Direction SPL266

- 266MHz Pentium II processor with MMX technology/512KB Integrated L2 Cache
- ATX Motherboard with 440LX Chip Set
- 4.3GB Ultra DMA Hard Drive/32MB SDRAM
- 4MB SGRAM AGP Graphics Card
- Altec ACS-90 Speakers/Integrated Yamaha Sound
- NEC C550 15" Monitor (14" v.i.s.)

* Upgrade to Wavetable Audio, add $49

* Upgrade to NEC C700 17" Monitor (16" v.i.s.), add $199

$2329

Business Lease: $84/mo.

To order, get a free catalog or find your nearest reseller call: Mon-Fri 8am-8pm EST

1-888-8-NEC-NOW

Dept. No. PW582A www.necnow.com

Circle 180 on reader service card

NEC

PKZIP® for Windows

Version 2.50
Compatible with
♦Windows 95
♦Windows NT
♦Windows 3.1x

Why use PKZIP for Windows?

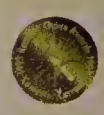
- Save on-line time charges and save disk space.
- Compress files an average of 50-70%. Many large files compress well over 90%.
- Open .ZIP archives downloaded from the Internet.
- Simple point-and-click interface.
- Combines the best and fastest patented compression technology found in PKZIP 2.04g.

Other PKWARE Products:
PKLITE® & PKLITE Professional® for Windows
Put your executables on a diet!

PKWARE Data Compression Library®
Put compression in your application.
Separate versions available for DOS, DOS32, Windows, Win32, OS/2, UNIX & Macintosh.

To order call 414-354-8699 or visit our web site http://www.pkware.com

TM



1992-1996 PC World World Class Award
1996 Government Computer News Best New Product Award at FOSE Finalist
1995 Computer Currents Readers Choice Award
1993 Shareware Industry Award
1992 Premiere Computing Magazine Award
1992 Dvorak/Zoom Award

PKWARE, Inc.
9025 N. Deerwood Drive
Brown Deer WI, 53223 USA
FAX: 414-354-8559
Email: info@pkware.com

Copyright 1996 PKWARE, Inc. All Rights Reserved. All trademarks or registered trademarks are the property of their respective owners. PCW-1097

Circle 212 on reader service card

JUST IN TIME

I'M A TECHNICAL SUPPORT guy for an Internet service provider and want to say thanks. I just received the *PC World* August issue today and had a customer who needed help with Internet Explorer and clearing the cache. If I had not seen your article ["Browser Secrets"], I would have had to turn this customer away. Keep up the good work.

Steven Lassiter, Los Angeles

EVEN OUR READERS HELP

I JUST READ Peter Davies' comments on serial port speeds in August *Letters*. Since my recently purchased 3Com/U.S. Robotics Sportster 33.6-kilobits-per-second modem seemed to be performing no better than my old 14.4-kbps one, I decided to check the serial port speed in Windows 95. Sure enough, the port speed was listed as 19200. I changed it to 57600, went back online, and am now enjoying the speed I paid for. Another reason I'm renewing my subscription—even my fellow readers help me out.

Jeff Wright, Internet

DON'T PUSH

AS A COMPUTER USER I do not want "push" technology. Advertising companies want it so they can get more "hits" on users, but users do not switch on their computers in order to get hit. Push should die even before it is born, because the dollar-driven clods who think this is a good idea are thinking only of themselves.

Lyndon S. Cox, Internet

PC World *welcomes your responses, ideas, and other letters to the editor.* *See page 14 for contact information.* ■

AND THE WINNERS ARE...

THE FOLLOWING READERS WON prize systems when their returned Reliability and Service surveys were selected at random:

March: William H. Winters, Seymour, Indiana
April: Barry Palmer, Sterling, Massachusetts
May: Suzanne Barnhill, Fairhope, Alabama

COMING UP IN NOVEMBER

REAL, CAN'T-MISS UPGRADES

Could it be? Cheap RAM, cool new 3D boards, and $300 OverDrive chips that make your Pentium-100 run like a Pentium MMX-166? We've got the latest on upgrades that look promising for that creaky old P-75 or P-100.

56 KBPS—HERE AT LAST

Finally, modems that promise Web access without long waits...but will your ISP work with them? We look at the new wave of 56-kbps modems and sort out the best buys likely to give you the least hassle.

PC/TV: COMING SOON?

Are your PC and TV turning into one Web-surfing, all-apps-in-one entertainment center? Here's our take on real products you can buy now and what to expect in the future.

WEB BROTHER IS WATCHING

More businesses are disciplining employees for everything from accessing adult Web sites to chatting online. Here's what you should know about surfing the Internet on company time.

ALSO NEXT MONTH

▶**The PC World Top 100:** The Top 20 power desktops, budget desktops, and notebooks, and Top 10 printers, monitors, graphics boards, and modems.

▶**Training to Better Use Your Software:** We rate a slew of training products—books, videotapes, and CD-ROMs—and found real productivity boosters.

▶**Here's How:** *Upgrade Guide* on installing a new CPU, *Windows Tips* on the best tricks for using WinZip, *Hardware Tips* on the best hardware and software reference books.

PC WORLD

It's a mini-tower, it's a rack drawer, it's...

..The ALR Revolution 2X

Up to **two** Pentium Pro or Pentium II Processors

The Revolution 2X's convertible chassis makes migrating to future rack-mount configurations easy and affordable.

It's said that flexibility is the key to success in today's corporate world. By that criteria, the Revolution 2X is definitely the system of choice for success-minded businesses. With this one computer you can choose between Pentium® Pro or Pentium® II processor technology, single or dual processing, workstation or server configurations, and mini tower or rack-mount form factors. Mix and match those features you need without having to pay extra.

intel inside PENTIUM® PRO PROCESSOR

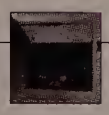
MMX™ intel inside pentium® II PROCESSOR

And this flexibility lasts for years. You can start with a single Pentium Pro processor-based mini-tower, upgrade to dual processing then upgrade to single or dual Pentium II processor technology after that. And when your business develops a centralized enterprise network, the Revolution 2X can evolve into an easy-access rack-mountable system.

To learn more about the remarkable Revolution 2X please call ALRs toll-free number today.

Twice the Memory
With room for 512-MB of RAM, the Revolution 2X offers twice the memory capacity of competitive Pentium II chip-based systems

More Expandable
4 available PCI expansion slots, three EISA slots (one position is shared), a built-in 2-MB video subsystem saves expansion slots, configuration time, and money. A cost-effective option includes integrated Fast/Wide ultra SCSI.



RAID Reliability
Hot-pluggable drive bays and array subsystems are available for network applications requiring on-line drive replacement.

InforManager with ActiveCPR

Because down-time is just not an option
Server models include ALR InforManager, an advanced hardware management subsystem that helps users head off potential problems before they lead to costly downtime. These models also include ALR **ActiveCPR** processor fail-over/protection and ALR Server Watchdog server auto-recovery. These technologies make the Revolution 2X ideal for unattended web-server applications and other environments requiring 24-hour access with limited maintenance.

1-800-444-4ALR
http://www.alr.com

5 YEAR 36 months warranty

ALR®
Advanced Logic Research, Inc.

ALR is on the Internet *CompuServe* - **GO ALRINC.** *& America Online* - **Keyword ALR** Advanced Logic Research, Inc. 9401 Jeronimo, Irvine, CA 92718 (714)581-6770 FAX: (714) 581-9240. Prices, configurations and specifications subject to change without notice. Systems shown with optional equipment. Pricing based on U.S. dollars. ALR is a registered trademark of Advanced Logic Research, Inc. Pentium logo and Intel Inside logos are trademarks of Intel Corporation. All other brand and product names are trademarks or registered trademarks of their respective owners. © 1997 by ALR

Circle 9 on reader service card

Tell your CEO PCs with the

AMD-K6™ MMX™ Enhanced Processor give you

the power to beat the competition.

© 1997 Advanced Micro Devices, Inc. AMD, the AMD logo, AMD-K6, and the AMD-K6 logo are trademarks of Advanced Micro Devices, Inc.
Microsoft and Windows are registered trademarks of the Microsoft Corporation. MMX is a trademark, and Pentium is a registered trademark of the Intel Corporation.

erformance enthusiasts and cost controllers, rejoice. No matter how much or how little you want to pend on a Microsoft Windows® compatible PC, you'll get higher performance from a system based on the MD-K6™ MMX™ Enhanced Processor. Check out the stats: blazing 233 MHz clock speed. Eye popping nultimedia capability. And sound quality even an audiophile will love. An AMD-K6 based system is more han an alternative to a Pentium® II based PC. It's the one that gives you more alternatives. Because with the noney you save, you can get twice as much memory. A better video card. Better audio. And a faster modem. n short, AMD-K6 based systems give you more performance CEO will approve) for the same money (CFO will approve). o get the rest of the story, hit our web site (you will approve).

AMD

www.amd.com

Tell your CFO it's a responsible fiscal decision.

Circle 16 on reader service card

We just made your choice a little easier..

The CyberMax A53 powered past the competition and impressed the editors at *PC Computing* so much that they honored us with their **5 Star Award.** This award exemplifies a "market leader that offers exceptional performance".

June 1997

In this year's June 24th issue, *PC Magazine* awarded **CyberMax** their prestigious Editors' Choice Award

JUNE 1997

Impressive. For the second time, in four short months, CyberMax received the prestigious *PC Computing* **5 Star Award.** This time around, it was for one of our **Cyrix™ 6x86MX**'s which, along with the AMD-K6, offer exceptional value and performance when compared to the Pentium®II's.

September 1997

The September issue of *Window Sources* awarded **CyberMax** their **Stellar Award** because "the Winstone® 97 score of 50.2 stacks up well against those of the more expensive Pentium II 266-MHz systems from Gateway and Quantex we reviewed this month."

September 1997

On ten occasions over the last six months, **CyberMax** was in the *PC World's* **Top-20 Budget Desktop** list.

April - September 1997

"An impressive balance of features, performance and price makes the CyberMax PowerMax A62 233MMX one of the best values among this group of K6-based systems."

September 1997

"For a below average price, the CyberMax PowerMax A62 233MMX delivers an outstanding package of components and software, as well as a superlative performance punch."

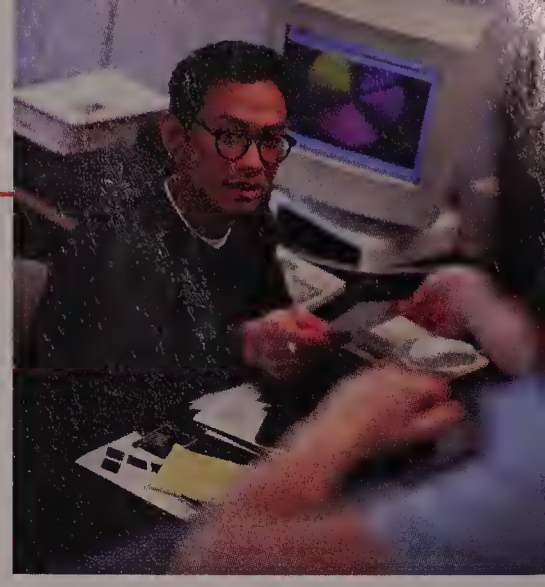
September 1997

CyberMax joins the elite group of Dell, Gateway, Hewlett-Packard & Micron who have won the **1997 *PC Magazine* Editors' Choice Award.**

CyberMax accepts Visa, MasterCard, Discover, American Express, prepaid checks and electronic wire transfers. Purchase orders from government agencies, universities, and Fortune 500 companies can also be accepted. All returned items must have an RMA number and must be in original packaging. The cost of returned freight is not included with any money back guarantee; shipping charges are not refundable. Prices and product descriptions are subject to change without notice. Microsoft, and Windows 95 are registered trademarks of Microsoft Corporation. Pentium, MMX and the Intel Inside Logo are registered trademarks of Intel corporation. AMD and Am5x86 are registered trademarks of Advanced Micro devices, Inc. Dell, Gateway, Hewlett-Packard and Micron are registered trademarks of their respective companies. *On-site service may not be available in certain remote areas, and is available only if determined to be necessary by our technicians; GE 4 year warranty is optional. Products may differ from image shown.Leasing terms:36 month/10% FMV option, taxes and shipping additional.

AMD K6 MMX™ ENHANCED PROCESSOR

PII Class - Small Office/Home Office



Technology today empowers us to work for ourselves and on our own terms. More than ever before, entrepreneurs and parents are beginning to bring the office home. ***Soho** (small office/home office)* captures the essence of what makes America great, the freedom to make our dreams come true. If you ever wanted to start your own small business or work at home, CyberMax can cover all of your computing needs. We feature systems powered by the AMD-K6™ with MMX™ technology, which runs both Windows® 95 and NT™ at top speed and delivers industry-leading performance on both 16 and 32-bit code. At CyberMax, we understand your needs and offer sensible solutions— and that's taking care of business.

64 MEGABYTES

DO1001 **$2749**

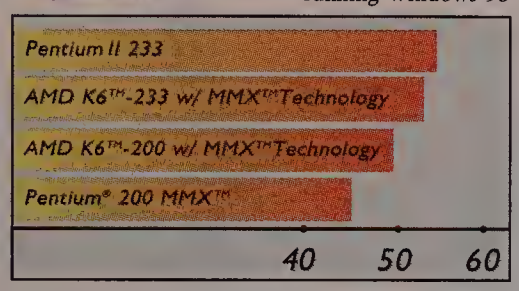
The PowerMax P1

Business Lease.... $91

- Intel 266MHz Pentium® II Processor w/MMX™ Technology
- 64MB EDO Memory
- Matrox MGA Millennium II Video Card w/ 4MB WRAM
- 6.4GB Hard Drive
- 24x Max CD-ROM, Ensoniq AudioPCI™ 32-bit Sound
- Iomega Zip 100MB IDE Internal Drive w/cartridge
- K56flex™ Protocol Fax/Mdm w/Voicemail & Speakerphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS45 Powercube Speakers & Subwoofer
- MS Office 97 Small Business Edition & Business Pack

PII-233.....$2649
19" Monitor.....$249

Ziff Davis Winstone® 97
running Windows®95



Choose the superior solution— the AMD-K6™ with MMX™ technology is the superior engine for Windows® computing. The AMD-K6 rivals the performance scores of the Pentium II processor.

64 MEGABYTES

DO1002 **$2249**

The PowerMax A2

Business Lease.... $78

- AMD-K6™ 233MHz Processor w/ MMX™ Technology
- 64MB EDO Memory
- Matrox Millennium II Video Card w/ 4MB WRAM
- 6.4GB Hard Drive
- 24x Max CD-ROM, Ensoniq AudioPCI™ 32-bit Sound
- K56flex™ Protocol Fax/Mdm w/Voicemail & Speakerphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS45 Powercube Speakers & Subwoofer
- MS Office 97 Small Business Edition & Max's Business Pack

K6-200.....$2149
Pentium® II-266.....$2649
Upgrade to 8.0GB HDD.....$149

COMPUTER SHOPPER *"The K6 performed almost identically to the Pentium® II system on the mainstream business applications in Winstone 97 (under Windows 95)"*
September 1997 - **K6 Contenders** (p. 180)

DO1003 **$1799**

The PowerMax A3

Business Lease.... $63

- AMD-K6™ 233MHz Processor w/ MMX™ Technology
- 32MB EDO Memory
- STB Velocity 3D Video Card w/ 4MB VRAM
- 4.3GB Hard Drive
- 24x Max CD-ROM, Ensoniq AudioPCI™ 32-bit Sound
- K56flex™ Protocol Fax/Mdm w/Voicemail & Speakerphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS90 Speakers
- Corel WordPerfect Suite 8 & Max's Business Pack

K6-200.....$1699
Pentium® II-266.....$2099
Add Iomega Zip 100MB IDE Drive.....$99

DO1004 **$1499**

The PowerMax A4

Business Lease.... $52

- AMD-K6™ 200MHz Processor w/ MMX™ Technology
- 32MB EDO Memory
- STB Nitro 3D Video Card w/ 4MB EDO DRAM
- 4.3GB Hard Drive
- 16x Max CD-ROM, Ensoniq AudioPCI™ 32-bit Sound
- K56flex™ Protocol Fax/Mdm w/Voicemail & Speakerphone
- 15" (13.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS90 Speakers
- Corel WordPerfect Suite 8 & Max's Business Pack

K6-233.....$1599
Upgrade to 6.4GB HDD.....$149
Add the MS Natural Keyboard.....$49

DO1005 **$1299**

The PowerMax A5

Business Lease.... $45

- AMD-K6™ 166MHz Processor w/ MMX™ Technology
- 16MB EDO Memory
- STB Nitro 3D Video Card w/ 2MB EDO DRAM
- 3.2GB Hard Drive
- 16x Max CD-ROM, Ensoniq AudioPCI™ 32-bit Sound
- K56flex™ Protocol Fax/Mdm w/Voicemail & Speakerphone
- 15" (13.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS90 Speakers
- Corel WordPerfect Suite 8 & Max's Business Pack

K6-200.....$1399
Upgrade to 4.3GB HDD.....$99

Max's business software pack

❖ MS Money ❖ Compton's Interactive Encyclopedia ❖ Multimedia MBA ❖ Business Card Pro ❖ Project Manager Pro
❖ Day Planner Pro ❖ Resume & Job Planner Pro ❖ Form Designer Pro ❖ Final Four NCAA Basketball
❖ **MMX™ Titles Include:** Blockbuster Video Guide ❖ Billboard Music Guide ❖ Azrael's Tears
❖ Windows® 95/Plus

Introducing Microsoft Office 97 Small Business Edition, the first Microsoft Office Suite created specifically with small business needs in mind. The Small Business Edition contains everything you need to get organized, expand your marketing capabilities, evaluate your financial performance, and take advantage of the Internet!
MSB Includes: Microsoft Word 97, Microsoft Excel 97, Microsoft Outlook 97, Microsoft Publisher 97, SBE Financial Manager and Automap Streets Plus

Upgrade from Corel® WordPerfect Suite 8 to Microsoft's SBE....$CALL *Upgrade to* MS NT 4.0 - Consider the possibilities for just.....$99

Standard Components on Every System:

Mini Tower Case w/2 Fans ♦ 512K Pipeline Burst Cache ♦ 1.44MB 3.5" FDD ♦ MS Windows® 95 w/MS Plus 104-Key Keyboard ♦ Microphone ♦ Microsoft PS/2 Mouse ♦ Limited 3-Year Warranty
30 Day Money Back Guarantee ♦ Toll-free, Telephone Technical Support ♦ 1-year. In-Home Service* & 10 Minute Quick Setup Guide
*Not available in some remote areas and requires technical support agent's approval.

CyberMax Computer, Inc.

Visit us @: www.cybmax.com

1-800-437-4596

Circle 74 on reader service card

ATI XPERT@Work puts the future firmly in your grasp.

ATI **XPERT@Work** is the NEW standard for Windows NT and Windows 95 graphics performance.

Professional Productivity

- Fastest performance for greater productivity in Windows NT and Windows 95
- Eliminate eye-strain with flicker-free images at up to 200Hz refresh rates
- Up to 8MB of ultra fast SGRAM for high resolution and true color acceleration

Leading Edge Support Now...

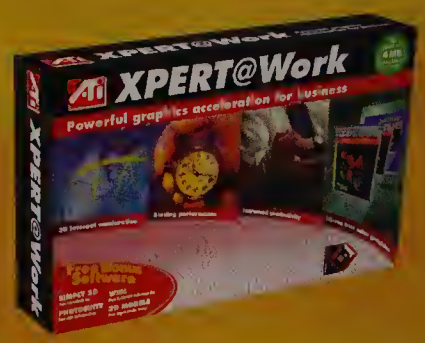
- Optimized for the best performance on Pentium II / PRO systems
- Rock-solid stability and worry-free compatibility with ATI's Microsoft Certified drivers

And for the Future

- With workstation-class 3D hardware that's DVD-ready, ATI protects your reinvestment into the future

Starting at $179[2]

Check out www.atitech.com or call (905) 882-2600



© Copyright 1997 ATI Technologies Inc. ATI, XPERT @ Work, 3D Rage Pro, ATI-TV and Now You See It are trademarks and/or registered trademarks of ATI Technologies Inc. All other product names are trademarks and/or registered trademarks of their respective owners. Features, performance and specifications may vary by operating environment and are subject to change without notice. Products may not be exactly as shown. [1] ATI driver used is a Microsoft Certification Candidate. 2D WinBench 97, Business Graphics Test at 1024x768x16bpp, 75Hz, run on an Intel Pentium II 266MHz, 512K cache, 32MB SDRAM, PCI bus, NT4.0. Hardware and software driver versions used: ATI XPERT@Work 4MB SGRAM driver release v4.10; Matrox Millenium 4MB WRAM v2.3 driver release v3.06; Diamond Multimedia Stealth 3D 3000 4MB VRAM v1.01 driver release v2.03. [2] Suggested retail price for 2MB upgradeable version.

Circle 25 on reader service card

Now You See It.™

ATI

Don't Get Mad, Get Online

Consumers' ability to air grievances on the Net has forced companies to respond to client complaints.

ILLUSTRATION: DAVID PLUNKERT

JEREMY COOPERSTOCK DIDN'T expect much when he wrote a letter to United Airlines last spring about a problem-ridden intercontinental flight. All he wanted was a formal response to the litany of problems he encountered on a flight from Toronto to Tokyo .

But after two months (and a follow-up letter), the only reply Cooperstock had received was a form-letter apology, along with two $100 vouchers toward a future United flight. Although the coupons would come in handy later, what he really wanted was an explanation for the troubles he'd detailed in his two-page missive, including, missed connections due to flight delays (announced, oddly enough, only in Chinese); bungled seat assignments, despite having made reservations months in advance; and a wool suit that was ruined when a flight attendant placed a stroller on top of a garment bag in the cabin storage area. Frustrated by United's lack of concern, Cooperstock did what any computer-savvy consumer activist would do: He created a Web page and shared his gripes with the world.

Cooperstock's first "anti-United" site went live in August of 1996. He dubbed it "Poor Show," and promptly informed United of its existence because he wanted the airline to know the consequences of poor customer service. "It wasn't the poor treatment we received from United, but rather the subsequent disregard for a serious, polite complaint that led to the creation of the Web pages," explains Cooperstock.

In one three-month period, the site has had 1500 hits, mostly from other United customers. It's also attracted the attention of United employees. According to access logs, says Cooperstock, 227 of those 1500 hits to the site were from the United URL. He adds that he has exchanged e-mail with several United employees about issues raised on his site.

A UNITED FRONT

THOUGH IT'S TOUGH to estimate the site's real effect, United has since begun a new ad campaign emphasizing the airline's efforts to better its customer service. "One thing is for certain," says Cooperstock, "letters that were once ignored by United's customer relations officials are read more carefully after they are posted to my site." Some are even acted on by industrious employees: In one case, a United customer service representative happened to read about a customer's problems on Cooperstock's pages and helped to resolve them.

As for the corporate muckety-mucks, executives at United's headquarters also acknowledged the site's existence after a few months: They threatened to sue for trademark infringement. While the name "Poor Show" could have referred to any company, Cooperstock's use of United's "Friendly Skies" banner with a big red X spray-painted through it and the words "Yeah, right!" below it made him vulnerable to legal action. He's since changed the name of the site to Untied Airlines (www.untied.com) and eliminated all the United logos and slogans. The opening screen now sports an airplane bear- ▶

THIS 3.3 FT. CABLE AND LENS ARE ATTACHED TO THE DIGITAL CAMERA THAT GIVES YOUR PC A WHOLE NEW OUTPUT!

(But to see the complete versatility and unlimited capabilities of this amazing digital camera

you'll just have to go to your Minolta dealer.)

Only the Dimâge V has all of these features:
MOVEnZOOM™ Lens with 3.3 ft. cable.
2.7x zoom range.
640x480 resolution.
1.8" color LCD finder/monitor.
Macro focus.
Compact, portable size.
Built-in flash.
Adobe Photo Deluxe™ software.
Unlimited image capacity on removable SmartMedia™.
Everything you need for PC or Macintosh™ computers.

CONSUMERS DIGEST BEST BUY

Minolta Presents

Dimâge V

THE FIRST AFFORDABLE DIGITAL CAMERA WITH THE REMARKABLE, MOVEnZOOM™ ROTATING/DETACHABLE LENS.

Only from the mind of Minolta

MINOLTA

For more Dimâge V information contact:
GO MINOLTA on CompuServe
1-800-528-4767 Toll Free Photofax
fax-back number 24 hours/7 days
www.minoltausa.com

©1997 MINOLTA CORPORATION

ing the name, "Untied Airlines," and a new slogan: "The most Unfriendly Skies."

Is Untied Airlines a fluke? I don't think so. Like Cooperstock, Josh Brannon got revenge with his own Web page, called "Infiniti Hell" (websource1.com/infin/), after he was unable to get satisfaction from his local car dealer or from the corporate offices of the luxury automobile manufacturer. And people boycotting all kinds of companies from Nike to Mitsubishi are expounding their causes on custom-designed Web pages. The targeted companies and the nature of the grievances vary, but in every case the message to corporate America comes through loud and clear: Beware the Web-empowered consumer.

> The nature of the grievances vary, but the message to corporate America is the same: Beware the Web-empowered consumer.

Personalized gripe sites aren't the only way consumers are being heard. Hundreds—perhaps thousands—of individuals are posting messages on Usenet newsgroups, sharing their thoughts on everything from poorly made products to questionable customer service practices.

NOW HEAR THIS!

ALTHOUGH A HANDFUL of newsgroups air complaints and compliments of all types, most people post messages about their experiences on subject-specific newsgroups (such as alt.sys.pc-clone .*companyname* for PC companies or alt .autos.*companyname* for cars).

Gary Cohen understands the power of newsgroups. He broadcast his concerns about Zero Plus Dialing on the misc .consumers site after he was charged $40 for two brief calls made using a calling card from a pay phone. Among the responses Cohen received was an e-mail from a woman whose college-student son had paid close to $600 in overcharges.

Online activism works both ways, says Cohen, noting that he now checks newsgroups for positive and negative comments about a company that he's considering doing business with. On a recent trip to Florida, for example, he wanted to get information about a local scuba diving outfit, so he searched rec.scuba for any reports of problems with the company. Since there were only positive comments, he went ahead and used its services.

Even if you're not ready to share your opinions with the world, it's never been easier to share your thoughts and concerns with the companies with which you do business. Just about every national company is now online, taking advantage of the popularity of the Web to market its goods and services. But did you also realize that those same sites you use to locate a dealer or research products also provide an excellent way to tell companies what you think about their products and services?

A few weeks ago, for example, a bottle of freshly squeezed Odwalla juice that I'd purchased at my local store exploded in my refrigerator, leaving a sticky orange goo all over. Since the juice was still within its "freshness date," I decided to contact the company about what happened. I received a personalized response within 24 hours of sending my e-mail, complete with the sender's direct toll-free phone number and an offer to send me a check for the cost of the juice.

Without the Web, I probably wouldn't have taken the time to send a letter—I would have just grumbled to friends about the mess. Now I get to air my complaint, Odwalla can see if there's a problem with the cooler at the local store, and I get my $5 back for the juice. Sounds to me like everyone wins.

Of course, not every company is so Web accessible. I recently logged on to Alaska Airlines' site to send a note about some late-arriving luggage, but there was no way to reach the customer service department online. The best I could do was send e-mail to the Webmaster asking that my letter be forwarded to the appropriate person. I never heard back.

There's no question the Web is changing the face of customer service. Not only is it easier for consumers to contact companies, but the power to broadcast ▶

DON'T CAN THEM! SCAN THEM!

THE NEW DIMÂGE SCAN DUAL SAVES YOUR OLD PICTURES FOR NEW LIFE ON YOUR PC.

Now clearing out your picture files doesn't mean throwing out. Scan those 35mm or Advanced Photo System* shots on the new Dimâge Scan Dual. After you're finished eyeballing the 8 million pixels resolution, you can e-mail your shots, design with them or use them any way you want on your PC. And all for a price that won't trash your budget.

*Advanced Photo System scanning requires optional adapter.

Dimâge Scan Dual

MINOLTA

©1997 MINOLTA CORPORATION

WHERE TO START

IF YOU'RE MAD, but not mad enough to build your own Web site, here's what you can do to voice your concerns about a company's products or services.

- **Check the company's Web site.** If there's a customer service section, post your message there. If not, try e-mailing the Webmaster, requesting it be forwarded to the appropriate person.
- **Post a message on an Internet newsgroup.** Misc.consumer includes queries and complaints on a wide range of topics. Also check newsgroups that focus on specific subjects, such as PCs or cars.
- **Exploit existing Web-based resources.** Consumer World (www.consumerworld.org) has links to dozens of customer service sites for major companies. For links to many complaint sites set up by disgruntled customers, check Yahoo's list at www.yahoo.com/Business_and_Economy/Consumer_Economy/Consumer_Opinion/. The Better Business Bureau now accepts complaints online at its site (www.bbb.org/complaints/consumerform.html).

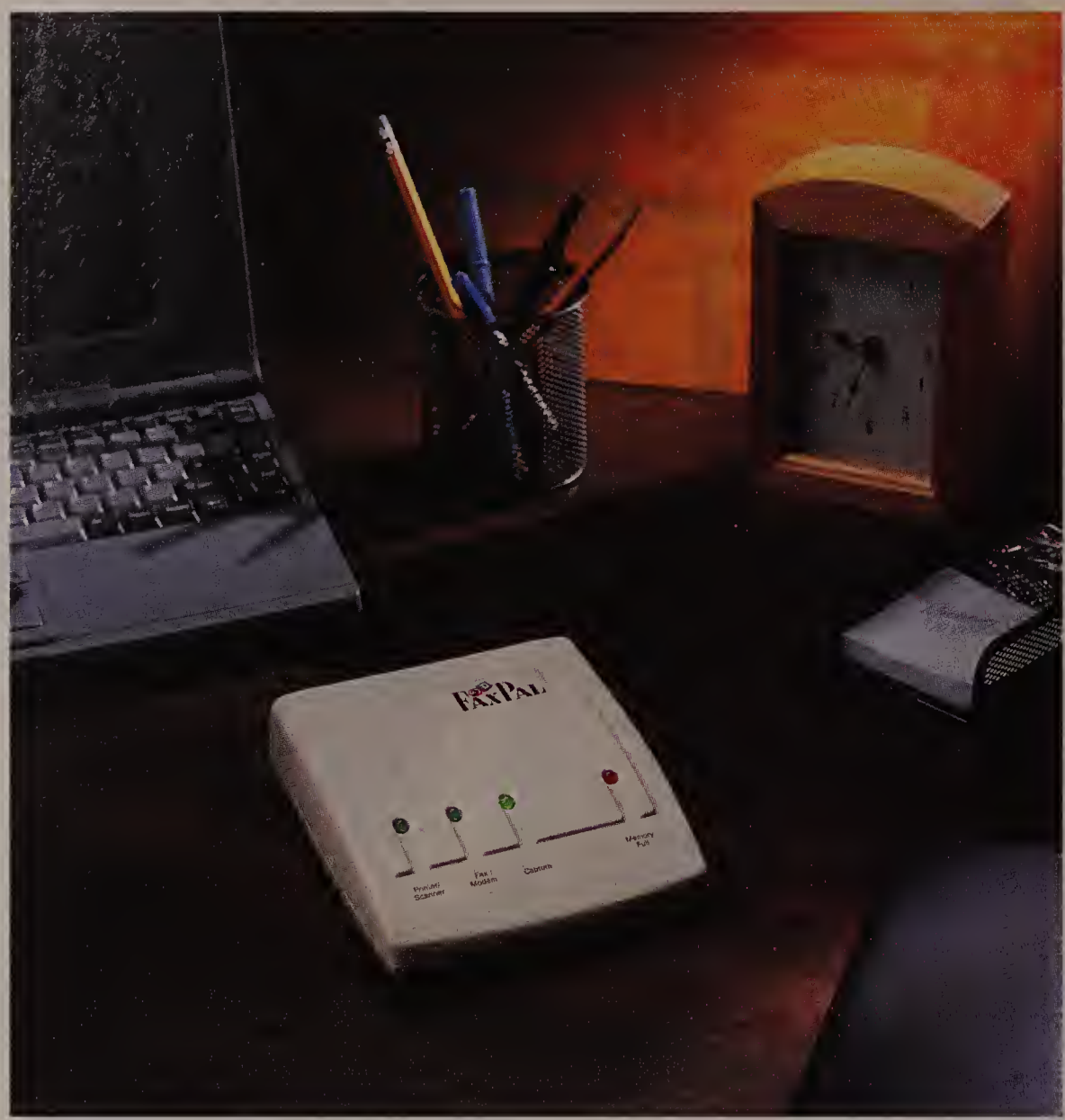
those concerns to the world adds a whole new dimension to consumer activism—and company awareness of it.

But with this newfound power comes the responsibility to make sure that comments are fair and the concerns valid. Legal experts say you should choose your words carefully and refrain from mentioning specific employees in postings.

It also pays to use discretion when evaluating information posted about a company. Don't base your opinion on a single angry or highly critical letter. Instead, look for a pattern of comments that indicate a company's willingness—or unwillingness—to serve its customers.

The bottom line: It's never been easier to be an informed, proactive consumer. So what are you waiting for? Speak up.

Got a gripe to air? Send e-mail about it or any consumer issue to consumerwatch@pcworld.com. Roberta Furger is a PC World *contributing editor. Her first book,* Does Jane Compute? *will be published by Warner Books in February 1998.* ■



3D FaxPal lets you receive faxes by storing them in memory – even while your PC or Macintosh is turned off. Easily connected to your phone line, 3D FaxPal shares the line with your phone, listening in for incoming facsimile tones. If a fax tone is detected, 3D FaxPal intercepts the call. If a voice message is detected, 3D FaxPal remains inactive, allowing the user or phone answering machine to take the call. Using flash memory, 3D FaxPal can store up to 20 pages of standard text (upgradeable to 200 pages) until you are ready to retrieve them at your convenience. No need for an internal fax/modem card or even a fax machine.

PC / FAX

ANSWERING

If you use a portable computer, 3D FaxPal is the perfect companion to leave back at the office to receive incoming fax documents. Ideal for small businesses and busy people, 3D FaxPal is your personal fax server.

MACHINE

TELEPHONE LINE SHARING

SINGLE PHONE LINE OPERATION

Call 1-800-966-1140 today to find out more about 3D FaxPal and 3D FaxFile software from InfoImaging Technologies.

InfoImaging Technologies, Inc.

3D FaxPal

Your Personal Fax Server

7026 Koll Center Parkway, Suite 201 • Pleasanton, CA 94566
510-485-4000 tel • 510-485-4100 fax
www.infoimaging.com

Circle 112 on reader service card

Vivid Imagination

Once again, Acer sets higher standards in performance, quality and value with the introduction of a new family of AcerView™ monitors designed to maximize your viewing experience. ***Revolutionary Mini-Neck CRT Tubes*** in selected models offer ***Power Consumption Reductions Up to 46-Percent***, while Intelligent iScreen®* design makes customizing your favorite settings a snap. ***With Sizes Up to 17" (15.7" viewable), Optional Attached Speakers*** and ***Dot Pitch Ranges from .28 to .25***, AcerView has the perfect flicker-free model just for you. Backed by Acer's 3-year limited warranty and outstanding reputation for reliability, they're all ***Windows® 95 Plug'n Play Compatible***. Call ***1-800-379-2237, Ext. 124*** today for the dealer nearest you to see the new monitors from AcerView that display images so vividly, you'll question reality.

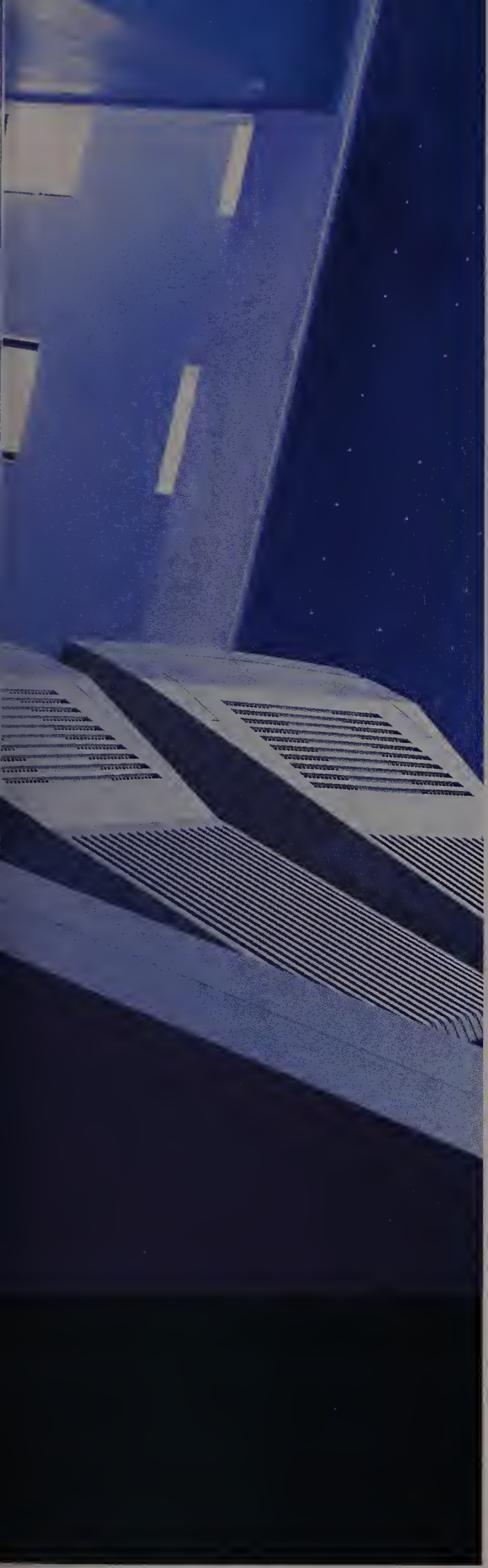
Acer®

AcerView™ Quality Monitors

©Copyright 1997 Acer Components, a division of Acer America Corporation. All rights reserved. *iScreen not available with 35c or 55c models.
The Acer Components logo and AcerView are trademarks and iScreen is a registered trademark of Acer America Corporation and Acer Inc. Windows is a registered trademark of Microsoft Corporation. All other trademarks are the property of their respective owners. Vivid.PCW.7/97.124

HOW POWERFUL IS THE NEW DELL WORKSTATION?

Mini-tower chassis anticipated to ship 9/97 (although customers can order now). ★ Prices and specifications valid in the U.S. only and subject to change without notice. †For a complete copy of our limited warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. Attn: Warranties. Δ On-site service provided by third-party providers and may not be available in certain remote areas. 3Com and EtherLink are registered trademarks of 3Com Corporation. ©Copyright 1997, Standard Performance Evaluation Corporation. Information value correct as of print date. Intel, the Intel Inside logo and Pentium are registered trademarks of Intel Corporation. Windows and Windows NT are registered trademarks of Microsoft Corp. ©1997 Dell Computer Corp. All rights reserved.



FINANCIAL SERVICES DUAL MONITOR WORKSTATION

DELL® WORKSTATION 400M
DUAL 300MHz PENTIUM® II PROCESSORS

- 128MB ECC EDO MEMORY
- 4GB Ultra/Wide SCSI-3 Hard Drive (7200 RPM)
- APPIAN Jeronimo J2 Graphics Card
- 24X Max/12X Min EIDE CD-ROM Drive
- Sound Blaster Audio Controller
- Integrated 3Com Fast EtherLink XL
- Factory Installed Windows NT® 4.0 with 1 Year Telephone Support
- Two 1000LS Monitors (15.9" v.i.s.)
- 3.5" Floppy Drive
- 3 Year Limited Warranty† with 1 Year NBD On-site^Δ Service

★ ***Upgrade to 3 Years of NBD On-site Service for $99.***

PICTURED SYSTEM

$7379
Order Code: 900002

ADVANCED APPLICATIONS WORKSTATION

DELL WORKSTATION 400M
266MHz PENTIUM II PROCESSOR
(Dual Processor Capable)

- 64MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive (7200 RPM)
- Matrox Millennium PCI with 4MB Video Memory
- 24X Max/12X Min EIDE CD-ROM Drive
- Sound Blaster Audio Controller
- Integrated 3Com Fast EtherLink XL
- Factory Installed Windows NT 4.0 with 1 Year Telephone Support
- 1000LS Monitor (15.9" v.i.s.)
- 3.5" Floppy Drive
- 3 Year Limited Warranty with 1 Year NBD On-site Service

★ ***Upgrade to 3 Years of NBD On-site Service for $99.***

$3899
Order Code: 900000

Dell's expertise in industry-standard technology gives the Dell WorkStation 400 a price/ performance edge over selected models from significant competitors, as shown below. These tables reflect a 3D-graphics-oriented benchmark modeling an environment similar to mechanical CAD.

Viewperf CDRS Benchmark^Ω Test Workstations – Relative Price Performance‡		
Dell	WorkStation 400 266MHz w/ELSA Gloria-M Glint MX	$195
IBM®	IntelliStation M Pro Model 26U INGR w/Intense 3D Pro 1000	$220
SGI	O2 R5000/180MHz SCO2	$533
Sun Ultra	Ultra 1 Creator3D Model 170E w/Creator3D	$446
Digital	Personal Workstation 266i w/AccelGraphics AccelPro 2500TX	$624
SGI	Octane 1x175MHz R10000 SI w/Tram	$922

‡Price per composite score. Lower number indicates greater price value. For more in-depth information, refer to www.specbench.org/gpc/opc/opc.cdrs.summary.html.

Fasten your seatbelts. Because the Dell Workstation 400 is going to rock the entire industry. You see, it's more than just a multitasking powerhouse. It just may represent the end of your being held hostage to RISC processors, proprietary operating systems and the ransom of exorbitant operating costs. Developed in close association with key applications developers, it's here to overturn the workstation establishment. (Remember what we did for desktops and portables?) Which means the Dell Workstation 400 isn't just available with dual 300MHz Pentium® II processors, the fastest Intel® processors for enhanced CAD and 3D graphic performance. It's available at a price point that few companies have the business model to match. Giving you the benefits of supreme compatibility testing, hardware certification, performance measuring and hardware/software support. Want more? Visit us on the Web or give us a call.

TO ORDER TOLL-FREE
800-545-3820
TO ORDER ONLINE
www.dell.com

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03304

DELL®

See The Big Picture

	78D	78i	7D	76i	74i
CRT Size/Viewable Size (17"/15.7")	•	•	•	•	•
Max Resolution (NI)	1600 x 1280	1600 x 1280	1280 x 1024	1280 x 1024	1024 x 768
Dot Pitch/ Aperture Grill	.25AG	.26DP	.28DP	.28DP	.39DP
Digital Controls	•	•	•	•	•
On Screen Programming	•	•	•	•	
Color Controls	•	•	•	•	
Stereo Speakers/ Microphone			•		

Open your eyes wide to the brilliant 17" (15.7" VIS) GoldStar monitors from LG Electronics. With resolution up to a razor-sharp 1600 x 1280, vertical refresh up to 85 KHz and advanced features such as digital controls and on-screen menus, there is a GoldStar monitor for everything from general business applications, to graphics and DTP to CAD/CAM. What's more, GoldStar monitors deliver this big performance at a price much less than...well, you get the picture.

For more information on the new GoldStar monitors, including the incredible new Studioworks 78D with Diamondtron™ CRT, call 800-243-0000 or visit our web site at www.lgeus.com.

PARTS • LABOR • CRT 3 YEAR LIMITED WARRANTY

AMcom 800-355-0110 • ComputerMax 407-834-7000
D&H 800-340-1001 • DSS 888-DSS-1DSS (377-1377)
Gates/Arrow 800-332-2222 • GBC/Globelle 800-745-7000
Ingram Micro 800-456-8000 • Liuski 800-454-8754
Pantex 713-988-1688 • Seneca Data 800-227-3432
Tech Data 800-237-8931

Diamondtron is a trademark of Mitsubishi Electronics America, Inc.

GoldStar
LG Electronics

Circle 96 on reader service card

Where's my company? ◆ The PC that bounced ◆ Low expectations, high praise

When Your PC Company Goes AWOL

WE'VE RECEIVED A number of pleas from lost Austin Computer owners—Scott Deeck of Jacksonville, Florida, among them. "They're not answering the phone," Deeck laments. "Who do I call for help?"

At press time there was no good answer. Austin Computer Systems of Austin, Texas, went out of business last May and left no trail for customers to follow. Austin's old phone numbers offer only a perpetual busy signal.

Austin's Web site (www.goaustin.com) is still up and running, but it's like a ghost ship, floating untended in cyberspace. It does provide details about an authorized service center (Austin OEM Services, 512/835-0883).

Unfortunately, when you buy a product that requires long-term support, you're stuck if the company goes under. Buying a well-known brand is safer—but more expensive. If you find yourself the owner of an orphaned product, try asking for help on the Net. Check out SupportHelp.com (www.supporthelp.com) or TuneUp.com (www.tuneup.com). Also check newsgroups, like comp.sys.ibm.pc.hardware and alt.comp.hardware.pc-homebuilt. But if something is broken, you'll probably have to pay a local shop to get it fixed.

DEPARTMENT OF STRANGE ADVICE

A READER FROM Boerne, Texas (who asked not to be named), wrote with a fascinating tale of strange tech support advice and a computer case that was impossible to open. He wanted to install a different CD-ROM drive in his Dell Dimension but couldn't open the case. "I called Dell tech support, and the technician suggested I bounce the computer delicately on a carpeted floor," he remembers. Dell refused to send on-site service. Our hapless upgrader called in a beefy wrestler friend for help. The case yielded; the CD-ROM drive got installed.

We asked Dell why on-site service could not help bounce the computer. A spokesperson told us that on-site service is strictly for replacement of parts, not for troubleshooting. However, if our reader had continued to ask for help, "we would have taken a closer look," the spokesperson added.

SURPRISE! WE CAN HELP

DAVE BROWN OF Dunnellon, Florida, read the complaints about Iomega in February's *PCW Advocate* and felt the need to defend the company. Back in February people were up in arms over Iomega's failure to deliver on a rebate offer (for more on that matter, see next month's *Consumer Watch*). But if Brown's story is any indication, Iomega's service may have improved. Brown had trouble with his Zip drive. "I called expecting to get a red ear," he says. But within 3 minutes he was speaking with a live person, who promised a replacement drive in four days. "To my surprise, I received the drive in three days, and it was working in 5 minutes."

ONLINE TRAVEL TROUBLES

IGNACIO ROMERO writes from the Big Apple to warn us of his experience buying airline tickets through Microsoft Expedia (www.expedia.com). "The day of my flight to South America arrived, but my tickets didn't," recalls Romero. "Airborne Express delivered them after the flight left." The tickets had been delivered to the wrong address prior to the departure date.

When Romero attempted to reschedule his trip, Expedia insisted he fork out $50 to change his flight. He refused to pay. "The fact that Airborne Express made the error is not my problem," protested Romero. We spoke to Erik Blachford, product manager for Microsoft Expedia, and he said that "in this case, the delivery service let us down, so we've agreed to issue Mr. Romero a full refund." Romero is happy with the outcome but told us he would never use Expedia again.

Think you've gotten a raw deal—or a great one? PCW Advocate *wants to hear the details at advocate@pcworld.com. We'll investigate complaints and publish items of the broadest interest. Aoife McEvoy is a staff editor for* PC World. ■

ILLUSTRATION: ROBERT NEUBECKER

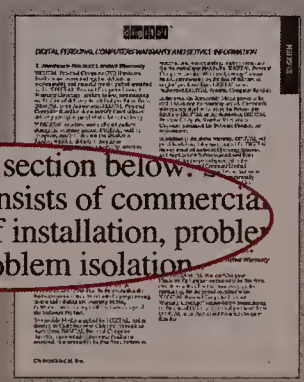
THE FINE PRINT

SOFTWARE SUPPORT: WHAT QUESTIONS CAN I ASK?

PC MAKERS THAT BUNDLE operating systems and applications on their machines usually support such software. But that support is probably more limited than what you'd get if you bought the software from its publisher. This warranty from Digital, for instance, offers free software support for 90 days. But look closely at the details to get the rundown on what's available to you.

1. If you're getting error messages involving the preinstalled OS and application software, or are having configuration problems or hardware-software conflicts, you're entitled to free help.

2. But if you need help creating, say, a formula in Excel, don't look to Digital. This isn't considered tech support; it's called tutorial help, and most warranties don't cover it.

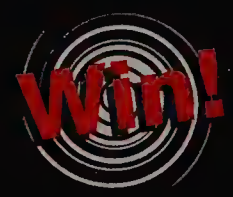


Superior perfo for *business*

Matrox Mystique® 220 Business - award winning performance at a new low price

The new *Matrox Mystique 220 Business* graphics accelerator provides a high performance, all-in-one solution for demanding business applications. Featuring a new, high-speed 220 MHz RAMDAC and fast SGRAM memory, *Mystique 220 Business* delivers benchmark-winning speed and refresh rates with exceptional display quality. Its state-of-the-art design integrates acceleration for 2D, 3D, and video, so you'll be ready for today's and tomorrow's Windows® NT and 95 applications. What's more, Matrox protects your investment by building an affordable memory and video upgrade path into every product. Add up to 8 MB of SGRAM power or the Matrox Rainbow Runner Studio for video editing, video conferencing, MPEG computer based training, and much more.

With over 20 years of experience and 250 international awards of excellence, Matrox is the company you can rely on. Choose the leader in acceleration. Choose Matrox.



matrox

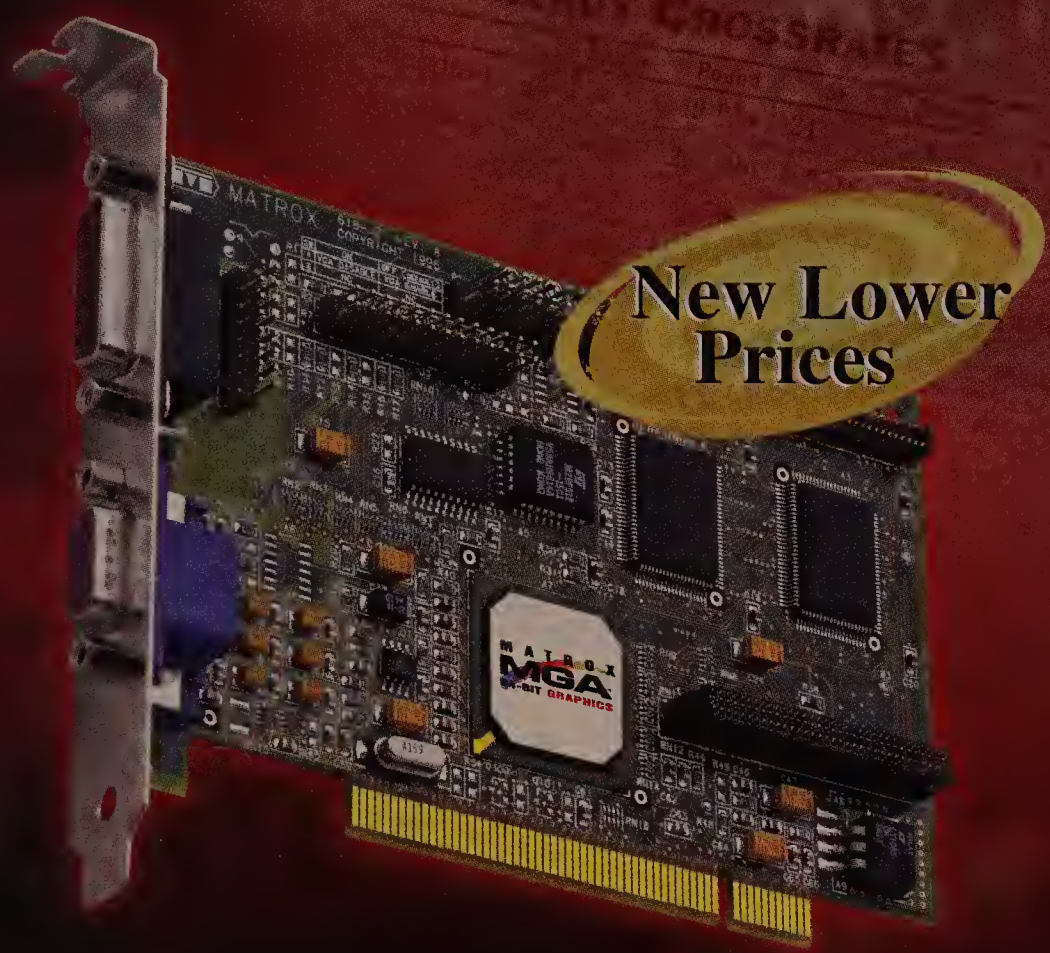
http://www.matrox.com/mga

a free **matrox board** check out
www.matrox.com/mga/pcworld

Estimated Street Price. All performance tests conducted by Matrox Graphics Inc. Windows 95 tests conducted on Dell XPS H266 configured with an Intel Pentium II, 266 Mhz processor with 512K cache and 32 MB RAM. Matrox Mystique 220 Business, Diamond Stealth 3D 2000 Pro, STB Nitro 3D and ATI ProTurbo + PC2TV were configured with maximum memory configurations using driver revisions 3.63, 3.63, 4.03.00.3211, 1.52A and 4.03.2162 respectively. WinBench 97 business tests conducted at 1024X768 @ 16-bit at 75 Hz using small fonts under Windows 95.

rmance

computing



New Lower Prices

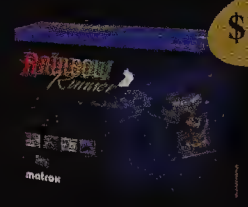
$139*
4 MB

Matrox Mystique 220 Business

- Fast 2D Windows, 3D business graphics and video presentations.
- Includes 6 free software titles. $500 value.

Matrox Five Pack

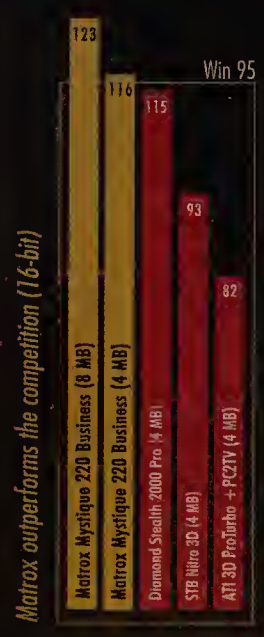
- Includes five boards, one manual, five sets of drivers, and five sets of software bundles.



$199*

Matrox Rainbow Runner Studio

- Ideal for video editing, video conferencing, PC to TV output, 'PC-VCR' video capture, and hardware MPEG video
- Includes 4 free software titles. $500 value.



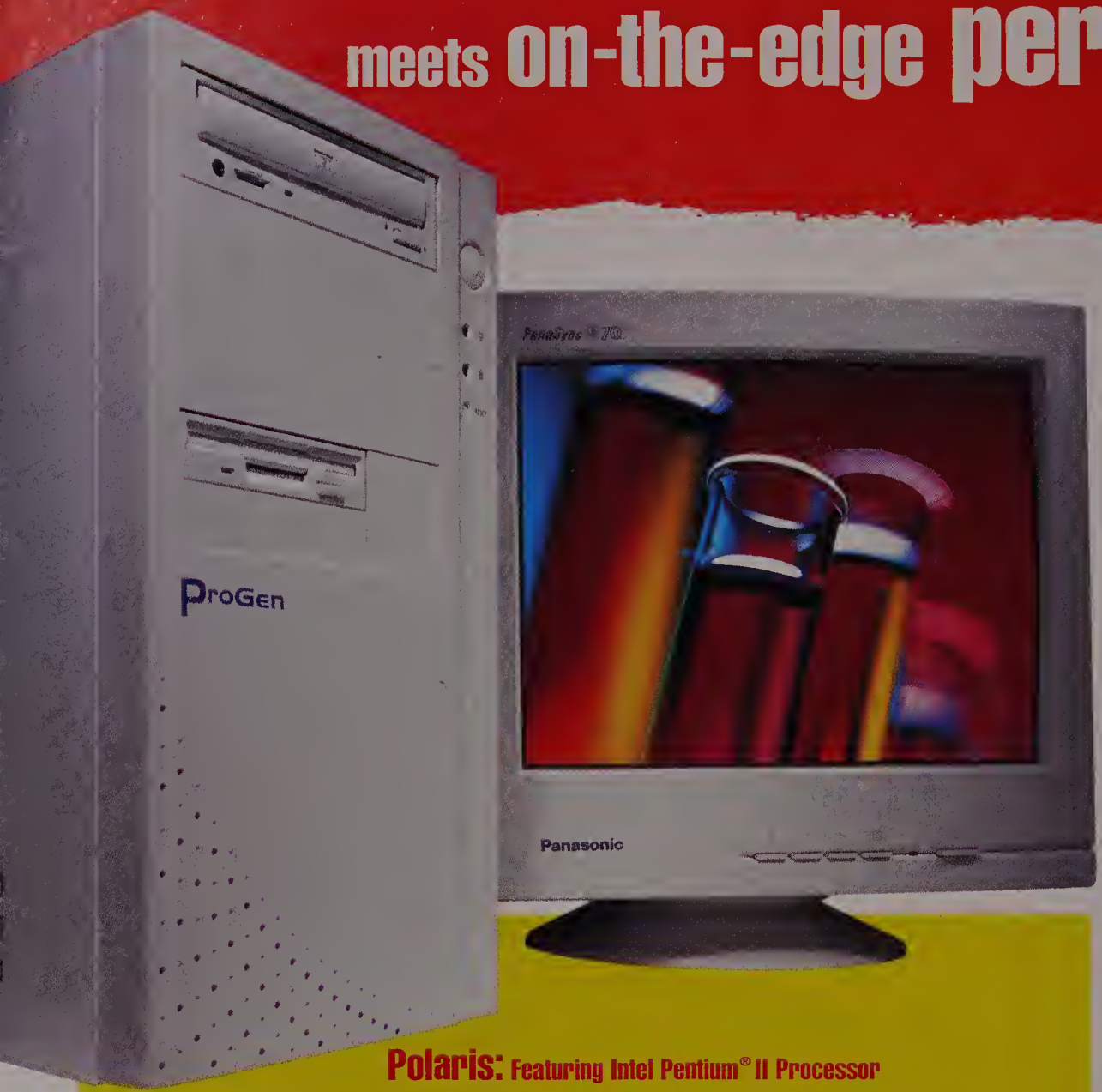
PC Computing BEST July 1997

Includes six free software titles

Picture Publisher 7 · Simply 3D 1 · Serif PagePlus 4.0 · CompCore SoftPEG · Includes Netscape Communicator · VREAM WIRL

Circle 143 on reader service card

At ProGen, competitive-edge pricing meets on-the-edge performance.



We at ProGen Systems have built our success on what we call the partnership of performance and price. It's a way of doing business that works for us. And it works for you, too.

That's because we build-in the latest industry advances, including genuine **233MHz Intel Pentium® Processors** with **MMX™** technology, **3D MPEG** video graphic acceleration, a **Subwoofer Sound System** and the new **24X CD-ROM** drives, and offer them to you at highly competitive prices.

Backed by the ProGen ProCare **3-year limited warranty, free tech support and on-site service**, our systems offer unsurpassed performance, reliability and value.

Whether you're looking for a business professional, corporate or multimedia solution, ProGen has the system for you at a price that works for your budget. So call a ProGen consultant today, or visit our **on-line order** web site at **www.progen.com**, and put ProGen to work for you.

Polaris: Featuring Intel Pentium® II Processor

Common features: 512KB Integrated L2 Cache, **NEW 24X EIDE CD-ROM Drive**, ProGen 3D (S3 Virge) 4MB EDO DRAM Video Card, **56K* Ready Telephony Modem**, 3D Stereo Wavetable Audio Subsystem, MS Mouse, Win95 KB, 1.44MB FDD, 2 Universal Serial Bus (USB) Ports, Super CD Bonus Pak, Microphone w/ Stand, ProGen ProCare Warranty: 3-Year Limited Parts + 1-Year On-Site

Polaris

- Intel 266MHz Pentium® II Processor
- 64MB EDO DRAM
- **NEW 6.4GB EIDE Hard Drive**
- ProGen 17" .28dp Digital PnP Monitor
- **Iomega Zip 100MB IDE Internal Drive with One Cartridge**
- Subwoofer Sound System w/Amplified Stereo Speakers
- MS Windows 95 (Upgrade to MS Windows NT 4.0, add $95)

$2499

Polaris

- Intel 233MHz Pentium® II Processor
- 32MB EDO DRAM
- 4.3GB EIDE Hard Drive
- Panasonic 15" (14" v.i.s.) .27dp Digital PnP Monitor
- Amplified Stereo Speakers
- MS Windows NT Workstation v.4.0

$1919

Discover 3D

- Intel Pentium® Processor with MMX™ Technology
- 512K Pipelined Burst Cache
- ProGen 15" .28dp Digital PnP Monitor
- **ProGen GOLD 3D (S3 Virge) 4MB EDO DRAM, MPEG**
- 16X EIDE CD-ROM Drive
- 33.6K Telephony Modem
- 3D Stereo Wavetable Audio Subsystem, complete with Amplified Stereo Speakers
- MS Windows 95/Hi-Res Mouse
- 1.44MB FDD/Win95 KB
- Super CD Bonus Pak, Microphone w/ Stand
- ProGen ProCare Warranty

166MHz Pentium® Processor w/MMX™ Technology — **$1049**
16MB EDO DRAM, 2.5GB Fast EIDE HDD

200MHz Pentium® Processor w/MMX™ Technology — **$1219**
32MB EDO DRAM, 3.2GB Fast EIDE HDD

233MHz Pentium® Processor w/MMX™ Technology — **$1399**
32MB EDO DRAM, 4.3GB Fast EIDE HDD

*Maximum transmission speed of up to 56K bps when downloading data and 33.6K bps when uploading. However, actual performance is dependent upon numerous factors and observed transfer rates may be less than the maximum potentials.

MMX™ intel inside pentium® II PROCESSOR

1-888-776-9595

Sales Hours: M-F, 6:30 A.M. - 7:00 P.M. PST • Sat., 9:00 A.M. - 3:00 P.M. PST
Technical Support: 1-888-777-5501 • Customer Service: 1-800-848-8767
Customer Service/Technical Support Hours: M-F, 8:00 A.M. - 5:00 P.M. PST

ProGen™ SYSTEMS
A division of ProGen Technology Inc

Works for You.
www.progen.com

ProGen™ Technology Inc. 15501 Redhill Avenue, Tustin, CA 92780 Ph: 714/566-9200 Fax: 714/566-9267
BBS: 714/566-9255 E-Mail: webmaster@progen.com.

©1997 ProGen™ Technology Inc. Intel Inside logo and Pentium are registered trademarks and Pentium Pro, Pentium II and MMX are trademarks of Intel Corporation. All other trademarks are the property of their respective owners. Prices are subject to change without notice. * On site service is based on the discretion of ProGen technical support. Leasing Rate will vary depending on state legislation, and is intended for business or corporate use only. 30-day money-back Guarantee (shipping cost not included). Actual products may be different from products in photo.

Circle 184 on reader service card

Videoconferencing That Actually Works?

When you have to be in 30 cities in less than two weeks, airplane travel isn't good enough. Lisa Goodman discovered using a videoconferencing service is the way to go.

PHOTOGRAPH: RICH FRISHMAN

THE PROBLEM It's Tuesday; this must be Toledo. When you've got a travel schedule as punishing as Lisa Goodman's, it's hard to know where you are or where you're going. Goodman is the principal of Service Intelligence, a Seattle-based market research firm. Service Intelligence often trains and deploys researchers in 30 cities at a time—hence the grisly itinerary. But that was then. Today Goodman and her colleagues are staying home more often, thanks to the neighborhood business center. —*Editor*

We were run ragged, dealing with a grueling travel schedule. But how else could we get our work done? At Service Intelligence, we train field researchers to act as average consumers. We send these researchers to a client's chain of stores, for instance, so they can report on how those stores are doing in customer service or sales. For this research we need a diverse sample of people, in cities all over the United States. This pool of researchers is continually replenished so we can get a fresh perspective.

Unfortunately, this process required several of us every week to fly to as many as four or five cities each. It was tiring and time-consuming, not to mention expensive. In addition, when you're traveling, you're unproductive. We were often in a mad rush to produce the detailed, timely reports our clients expect.

There had to be a better way.

THE SOLUTION: RENT VIDEOCONFERENCING, DON'T BUY

VIDEOCONFERENCING SEEMED to be the answer. But it wasn't cost-effective to invest in a system that might be obsolete in six months.

So we went looking for a videoconferencing service that would handle the details. We wanted to be able to just pick up the phone and say when we needed the videoconferencing facility and which facilities in other cities we had to be linked to. We discovered that Kinko's, the business center chain, offers videoconferencing services at many of its sites around the world.

[Videoconferencing is currently offered at 155 of the 850 Kinko's business centers worldwide. Kinko's offers this service in partnership with Sprint. Each videoconferencing site operates on a dedicated Sprint T1 line at 384-kilobits-per-second transmission speeds, using either the H.320 coding standard or PictureTel's SG-3 standard. Each site is equipped with a PictureTel 4000 videoconferencing system, which includes a 27- to 35-inch color monitor; a Kodak video camera on top of the monitor; a document camera for televising whiteboards, overheads, and other presentations; a VCR for taping the conference; and a control panel for managing the cameras and monitor. —*Editor*]

Using the Kinko's service has helped us out in many ways. Having access to so many videoconferencing sites around the country makes it easy to connect with researchers and affiliates, even in remote locations. We now train researchers over the course of a couple of ▶

days, compared to the two weeks it used to take. And by eliminating all that travel time, we're able to deliver more immediate information to our clients. Best of all, videoconferencing complements our high-tech, progressive image.

We're saving a lot of money on travel as well. It often costs $500 to $1000 for a person to visit one city. When you've got to send people to 30 cities, the cost is staggering: A conservative estimate is about $15,000. By comparison, the Kinko's service costs $150 per hour per site. It's a fair price for the convenience and service we get, but it's not cheap—up to 30 sites at 90 minutes a session can add up to a minimum of $6750. Still, that's a savings of over $8000, which we can then pass on to our clients.

At each Kinko's site someone is on hand to help us get acquainted with the equipment; we can also request that the specialist stick around in case there's a problem. The PictureTel equipment is fairly easy to maneuver. Sometimes we ask for a PC so we can include a PowerPoint presentation as part of the videoconference.

The Kinko's facilities are good, but videoconferencing in general is still not a mature technology. The delayed response to movement and speech can be a little disconcerting. We didn't walk in expecting real-time television quality, though, and the convenience greatly outweighs the limitations. Maybe a few years from now, when the cost has dropped and the technology has improved, we'll install a videoconferencing system in our own offices. But for now we're grateful to be in the office and not on an airplane.

Edited by James A. Martin

James A. Martin is a PC World *contributing editor. If you've solved a problem in your business using a particular PC application or hardware device, we'd like to hear about it. We pay $300 for published columns. See page 14 for contact information.* ■

THE DETAILS

CONFERENCING AT KINKO'S

KINKO'S VIDEOCONFERENCING service costs $150 per hour per site for a session in which one Kinko's videoconferencing site is linked to another, and $205 per hour for each site when a conference involves more than two Kinko's locations. The company's videoconferencing locations can link to non-Kinko's sites. The same charges apply unless the non-Kinko's site does not support 384-kbps throughput using the H.320 videoconferencing standard or PictureTel's SG-3 coding. In that case, a conversion is required, for which there is an additional $30 per hour charge for each Kinko's site.

For videoconferencing reservations, call Sprint (800/669-1235); for more information, call 800/254-6567 or visit the Kinko's Web site at www.kinkos.com/products/catalog/video.

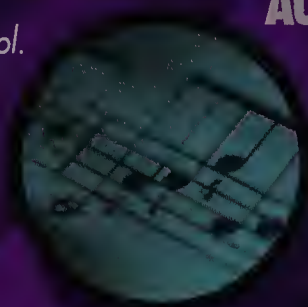
READER SERVICE NO. 616

USING MEDALLION™ REQUIRES NO PERSUASION

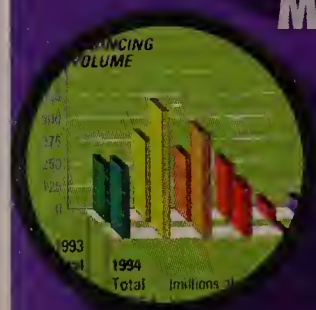
The most complete presentation assembler program ever with these outstanding features:

- A powerful, fully interactive multimedia creation tool.
- Very user friendly, create presentations in minutes.
- Launch programs within MEDALLION.
- Handles large files and recognizes all file formats with ease.
- Easily compresses presentations for distribution.
- MEDALLION Presentation Assembler and its viewer, allow you to export compressed presentations to any site.
- High network compatibility.
- Bypasses standard drivers, uses its own internal driver to enhance operation.

MOVIES


AUDIO

PHOTOS


GRAPHICS

COSTECH technologies

ORDER TEL: 1-888-385-3272
e-mail: costech@costech.com

Introductory offer $89.95

Circle 49 on reader service card

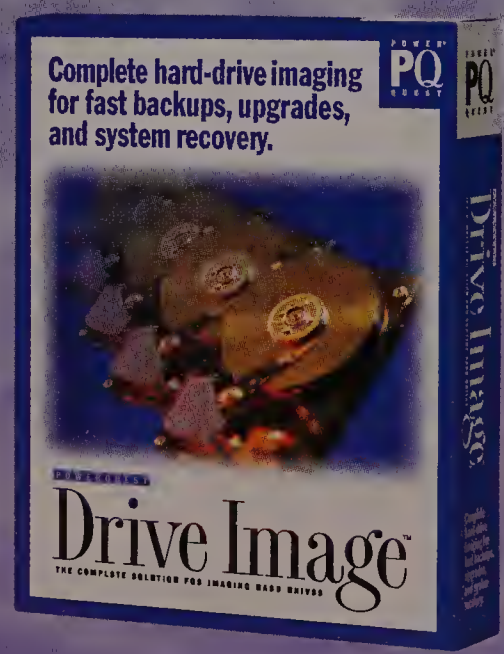
NOW YOU CAN

image YOUR hard drive IN A flash!

INTRODUCING **Drive Image.**™ THE FASTEST, EASIEST WAY TO IMAGE YOUR HARD DRIVE FOR **backups, upgrades** AND **complete system recovery.**

Buy Now! $15 Cash Back from PowerQuest

When you need an instant copy of your hard drive, Drive Image is the picture-perfect solution. You can easily create and store a compressed image file of your entire hard drive, or just selected partitions, on a JAZ, Zip, network, or second hard drive. That makes backups a breeze, and even a dreaded hard-drive crash is no problem. To restore your system, simply download your drive's image file from its storage source and you're ready to go. Drive Image also makes upgrading to a larger hard drive a snap. Simply copy everything from your old drive to your new drive. You can even specify the size of the partitions on the new drive during copying so everything fits the first time. And Drive Image is fast. Its patent-pending SmartSector™ technology works up to two to three times faster than straight file-by-file or sector-by-sector methods of copying. That saves you time and a lot of aggravation. For more information about Drive Image, visit our Web site at **www.powerquest.com.** Multiple workstation or site licensing options are also available. Call **1-800-379-2566** for details.



Buy Drive Image and get $15 back from PowerQuest. Ask your local reseller for details.

Babbage's Etc. • Best Buy • CDW • CompUSA • Computer City • Egghead • Electronics Boutique • Fry's Future Shop • J&R • Micro Center • Micro Warehouse • PC Connection • Tiger Direct

© 1997 PowerQuest Corporation. All rights reserved. PowerQuest is a registered trademark and Drive Image is a trademark of PowerQuest Corporation. Patents pending.

FROM THE MAKERS OF PARTITIONMAGIC®

POWER® PQ QUEST

Power,

Specifications

- 150 MHz Intel® Pentium® Processor with MMX™ Technology
- 12.1" SVGA Active Matrix LCD Display
- 16 MB SD-RAM, expandable to 128 MB
- Ultra-slim and light (1.5" thickness, 5.3 to 5.75 pounds, depending on drives installed)
- Removable 2.1 GB Hard Drive
- Integrated 33.6 kbps Modem/14.4 kbps Fax with Built-In Speaker Phone
- "Sony Tuned" MPEG Digital Video Playback
- Removable 14.5x CD-ROM Drive (maximum performance)
- Remote Control Headphones
- Digital Touch Pad
- Over 25 pre-installed software titles, including Windows® 95, Netscape Navigator®, Intuit Inc. Quicken® and more
- Optional Docking Station
- One-Year Limited Warranty, Parts and Labor

VAIO Notebook
Model#: PCG-705C

$3,499.99

*As low as $62.80 a month**

SONY

meet Portability.

Carrying Case
Model#: PCGA-CC7
$99.99

Designed to do one thing—everything.

Take the performance of a full-blown multimedia computer and put it in a tiny little box. That's what we did. The Sony VAIO™ Notebook gives you all the power you want in a sleek, lightweight package. An incredible combination of power, speed and portability. It's the only thing you need—to do anything you need.

The tiny little solution machine.

When compromise isn't an option, the VAIO Notebook is your only option. Listen to CDs in the CD-ROM drive while your Notebook is in Sleep Mode. Play the wildest games with the most incredible video. Run all your biggest programs—and waste no time doing it.

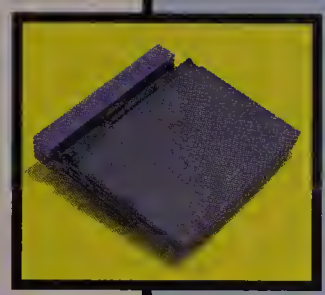
No down payment. No interest. No payment until 1998.

Get something for nothing. When you order any Sony product we'll ship it to you within 24 hours. But you'll pay nothing for six months when you use the Sony Preferred Card.**

So call Sony toll-free today to apply for your Sony Preferred Card, and have a friendly Sony expert tell you all about the VAIO Notebook—and the other Sony products designed to work with it. You'll see first hand how we've extended the Sony experience direct to you.

Check out our entire line of Sony products at

www.sony.com/getnotebook



Personal Docking Station
Plug your VAIO Notebook into a complete desktop system with an extra device bay, built-in battery charger and multiple interface connections.
Model#: PCGA-DH7
Price: $299.99

17″ Multimedia Display (16″ VIS)
Get a whole new perspective on your VAIO Notebook with superior Sony audio and award-winning Trinitron® technology featuring graphic picture enhancement.
Model#: CPD-220VS
Price: $899.99

VAIO All-in-One Printer
Fax, copy, scan and print in monochrome or color. The only document device you need.
Model#: IJP-V100
Price: $649.99

Order It Direct from Sony and Get:

- Convenient One-Stop Shopping for all your Sony computer products
- Shipping within 24 hours***
- Special Delivery Options available†
- 100% Satisfaction Guarantee††
- 24-hour, 7-days-a-week technical support for Sony PC systems
- Extended Limited Warranty Options
- Special Financing Options available

MMX™ intel inside® pentium® PROCESSOR

ORDER IT DIRECT FROM SONY

1-888-870-SONY

Because You Can.

© 1997 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Prices, products, special offers and specifications are valid only in the U.S. and are subject to change without notice. Prices do not include applicable sales tax or shipping. Sony, Trinitron, VAIO and the Sony logo are trademarks of Sony. Windows is a registered trademark of Microsoft Corporation. Intel and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. All other trademarks are trademarks of their respective owners. *Financing available on approved credit issued and administered by Servus Financial Corp. Call for details. **Pending credit approval, NO FINANCE CHARGES will be incurred if you pay the qualifying purchase amount in full within 6 monthly billing cycles from the charge date. No minimum periodic payment is required during the first 6 billing cycles after the charge date; thereafter the minimum periodic payment will be required. If the promotional amount charged is not paid in full by the payment due date set forth in your 6th monthly billing statement after the date of the charge, FINANCE CHARGES on the outstanding "Average Daily Balance" on the periodic statement will be calculated from the charge date of the purchase until paid in full. Variable APR = 23.23%. APR is variable based on Prime Rate + 14.73%. Minimum APR of 21.98%. Minimum FINANCE CHARGE of $.50. The Sony Preferred Card is a credit service of Bank One, NA, Dayton, OH. Applies with the purchase of $300 or more on purchases directly from Sony. ***Subject to product availability. †Delivery in the continental U.S. and 2nd day delivery available for Hawaii and Alaska. ††Shipping charges to and from the customer are not refundable.

Gift Code: SN-PW-10/97

Big enough to fit your vision.

Small enough to fit your budget.

ADI MicroScan

Introducing the new 19" (18" viewable image) ADI MicroScan 6P.

THE NEW MICROSCAN 6

- 19" (18" viewable image)
- 0.22mm horizontal dot pitch
- 1600 x 1200 @ 75Hz
- Horizontal Frequency 30-95KHz
- USB hub built-in
- Microphone built-in
- Attachable speakers option

The MicroScan 6P delivers the eye-opening benefits of a big screen but costs about the same as smaller monitors. Now you can get a 19" screen (18" viewable image) with the sharpest image clarity available, attachable speakers, built-in microphone, and a USB hub, all in an innovative design that fits neatly on your desk. And your budget. The perfect monitor for viewing one window or many, the MicroScan 6P bridges the gap between tomorrow's visions and today's desk space and budgets. With our industry-leading guarantee of quality and reliability, ADI registered users enjoy a free 45-month warranty*, 25% longer than our competitors. Call 1-800-977-3336 today, or visit us at www.adiusa.com for the dealer nearest you.

Seeing clearly into the futu

ADI

www.adiusa.com

©1997 ADI Systems, Inc. 2115 Ringwood Avenue, San Jose CA 95131. MicroScan is a trademark of ADI Systems, Inc. All other trademarks are properties of their respective owners. Specifications subject to change without notice. * 42 month warranty plus 3 month registration bonus.

Circle 3 on reader service card.

Office 97 gets service ◆ SmartSuite 97 freshens up ◆ JavaScript afflicts browsers

Office Update—Old Patches, New Pack

AS WE GO TO PRESS, we're expecting the release of Microsoft's long-awaited Office 97 Service Release (www.microsoft.com/Office/Office97/ServiceRelease). But the 8MB collection of Office 97 enhancements and add-ons doesn't contain much that isn't already available on the Office 97 Web site. In fact, the Service Release's main point seems to be putting all the current fixes and add-ons into a single patch.

Among the improvements: A 623K file-format converter lets Word 97 users save documents in true Word 6.0/95 binary format (for details, see *Real Solutions*, September). Outlook, the personal information manager and e-mail program, receives a bug fix that stops it from adding bcc: addresses to the headers of Internet mail messages; and rules and a three-pane–view add-on make the package more competitive with stand-alone programs such as Eudora. Another utility allows you to send stand-alone views of Access database reports to coworkers.

If the multimegabyte Service Release download is more than you want to contend with, you can order a free CD-ROM version from 800/426-9400.

LOTUS SMARTSUITE 97 SEASONAL UPDATES

MICROSOFT'S ISN'T THE ONLY SUITE in need of a little maid service. Lotus has quietly posted a collection of minor fixes to problems in 1-2-3, Freelance Graphics, Approach, and Word Pro. To download the patches, go to the Lotus Support Services Web page (www.support.lotus.com), then click the *SmartSuite Interim Update Program* link. Until Lotus replaces its summer collection of patches with a promised fall edition, here's what you'll find:

1-2-3 A 1.8MB patch fixes miscalculations in four @functions—@IRR (Internal Rate of Return), @MIRR (Modified Internal Rate of Return), @NPV (Net Present Value), and @NSUM (Summation of every nth value).

Freelance Graphics A 1.8MB patch lets you import JPEG files and improves TeamMail, chart display, and printer support.

Approach A 2.7MB patch improves SQL and ODBC support and smooths data export when using macros.

Word Pro A 5.6MB update improves printing and file filters and adds a document viewer and import filter for Lotus Notes 4.*x*. A document viewer for cc:Mail lets you examine and import files created in Word Pro 96 and 97.

JAVASCRIPT SECURITY FLAW

GUESS WHAT? Another browser security hole. This time the culprit is the JavaScript language, which researchers at Carnegie Mellon University's Computer Emergency Response Team Coordination Center recently discovered to be less than secure (read the advisory at ftp://info.cert.org/pub/cert_advisories/CA-97.20.javascript). A flaw in the language permits hackers to track the URLs you visit, capture any passwords you enter into forms, and view the contents of cookie files stored on your computer.

It's unlikely that any sites bearing lethal JavaScript actually exist, but frequent Web surfers would be well-advised to protect themselves. The best way is to install an updated version of your Web browser that closes the hole. Netscape Navigator 3.03 and Communicator 4.01a (home.netscape.com/download/) and a patch to Internet Explorer 3.02 (www.microsoft.com/ie/security/bell.htm) plug the hole.

The beta version of Internet Explorer 4.0 available as we went to press, Preview 1, does not fix the problem. Until there's a version that does, you can protect yourself by disabling Internet Explorer's JavaScript support. Select *View•Options•Security*, click the *Custom* button, then click *Settings*. Under the Scripting heading and the Active Scripting subheading, click the *Disable* radio button, then click *OK* twice.

Files from this article are available on PC World Online (www.pcworld.com/files). Scott Spanbauer is a senior associate editor for PC World. ■

IN BRIEF

PaperPort Driver Update

DOES WINDOWS sometimes lose track of your PaperPort scanner? Visioneer says the latest version of the PaperPort 3.0 and 3.5 driver fixes the problem, and banishes modem conflicts too (ftp://web1.visioneer.com/ftp/pportdrv.exe).

NT Fix Blocks Server Crashes

MICROSOFT HAD EGG on its face when an enterprising researcher figured out that sending a particularly long URL to Internet Information Server 3.0 (Microsoft's Web server software bundled with Windows NT) halts your server. You'll find a fix (one of a dozen post-Service Pack 3 patches) for Intel-based systems at ftp.microsoft.com/bussys/winnt/winnt-public/fixes/usa/nt40/hotfixes-postSP3/iis-fix/iis-fixi.exe.

BUGGED?

FOUND A HARDWARE or software bug? Tell us about it via e-mail at bugs@pcworld.com.

ICON: JEFFREY PELO

MMX™
intel inside
Pentium®
PROCESSOR

FOR MORE INFO, CALL 1-888-4-ON-THE-GO, ext. HA12,
visit www.fujitsu-pc.com or get a QuikFacts fax @ 1-800-936-5209.

LifeBook, Fujitsu and the Fujitsu logo are trademarks of Fujitsu Ltd. Intel and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective companies. © 1997 Fujitsu PC Corporation. All rights reserved.

THE TRUE MEASURE

of a notebook's speed

IS HOW QUICKLY

A COMPANY ANSWERS A SUPPORT CALL.

Under two minutes. That's the average time our customers have to wait to hear a helpful voice when they need tech support. Remarkably fast when you consider the industry average is 13 minutes. But getting through is one thing. Getting an answer is another. Fortunately, over 90% of questions to our support staff are solved with the first call. That's terrific. But not perfect. So we keep adding people (research shows people are more helpful than elevator music). Patient people armed with remote diagnostic tools, a case history for each LifeBook™ notebook sold and the rare ability to speak Novell®, Windows NT® and plain English in the same breath. For a $36 billion company, it's a surprisingly human touch.

Besides having the fastest phones around, we've come up with some other ways to save you time. We've preinstalled remote diagnostic software on every LifeBook. We ship parts overnight for our customers who can service a notebook themselves. And our web site gives users instant access to a complete list of FAQs and our dedicated Self-Help Center.

The service and support of Fujitsu PC Corporation. Because a notebook is only as fast as the company behind it.

FUJITSU

FUJITSU PC CORPORATION

Built *for* Humans.

Designed for Microsoft® Windows® 95

Circle 103 on reader service card

TOP OF THE NEWS

Pentium II-300

The Latest May Not Be the Greatest

Systems with Intel's fastest CPU zip through business and multimedia applications. But Dell's Pentium II-266 does almost as well. As for the long-awaited Accelerated Graphics Port—benefits will come next year.

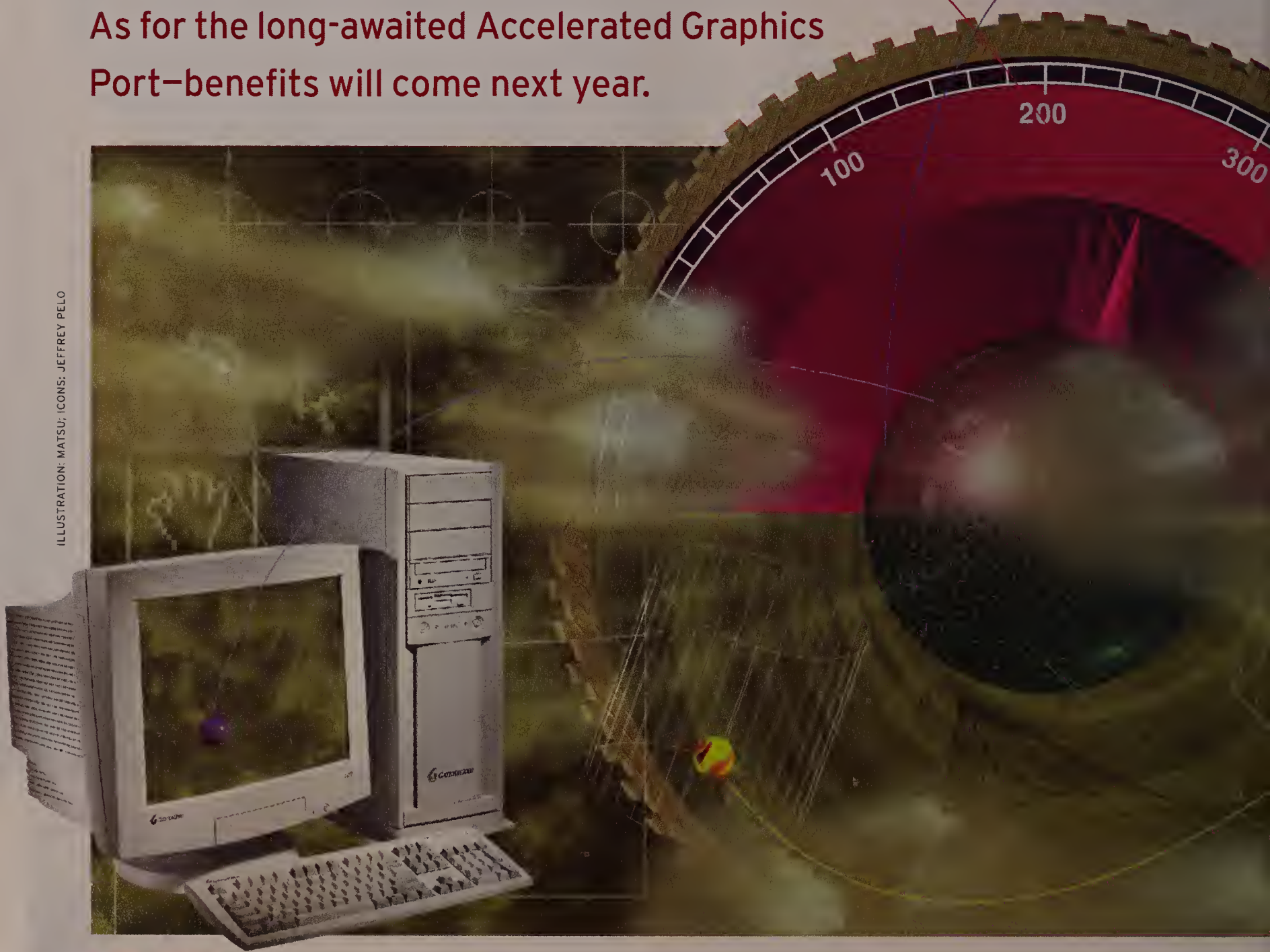


ILLUSTRATION: MATSU; ICONS: JEFFREY PELO

FOR YEARS you've been told that the next PC will be so great you can't resist. Higher speeds, more features, and, above all, new technologies will make that machine irresistible. Well, the next PC is here and you might want to resist it. The new Pentium II-300 machines aren't much faster than the less expensive Pentium II-266 systems. And the new technology du jour—Intel's long-awaited, highly touted Accelerated Graphics Port—is nothing to write home about. At least not yet.

For this review, we tested preproduction models of three Pentium II-300 PCs and one Pentium II-266 PC that use AGP technology and Intel's new 440LX chip set. The good news: Now is a great time to buy a fast multimedia system. The surprising news: You may not want the fastest of the fast.

EDITED BY
Charles Piller, Randy Ross, and Bill Snyder

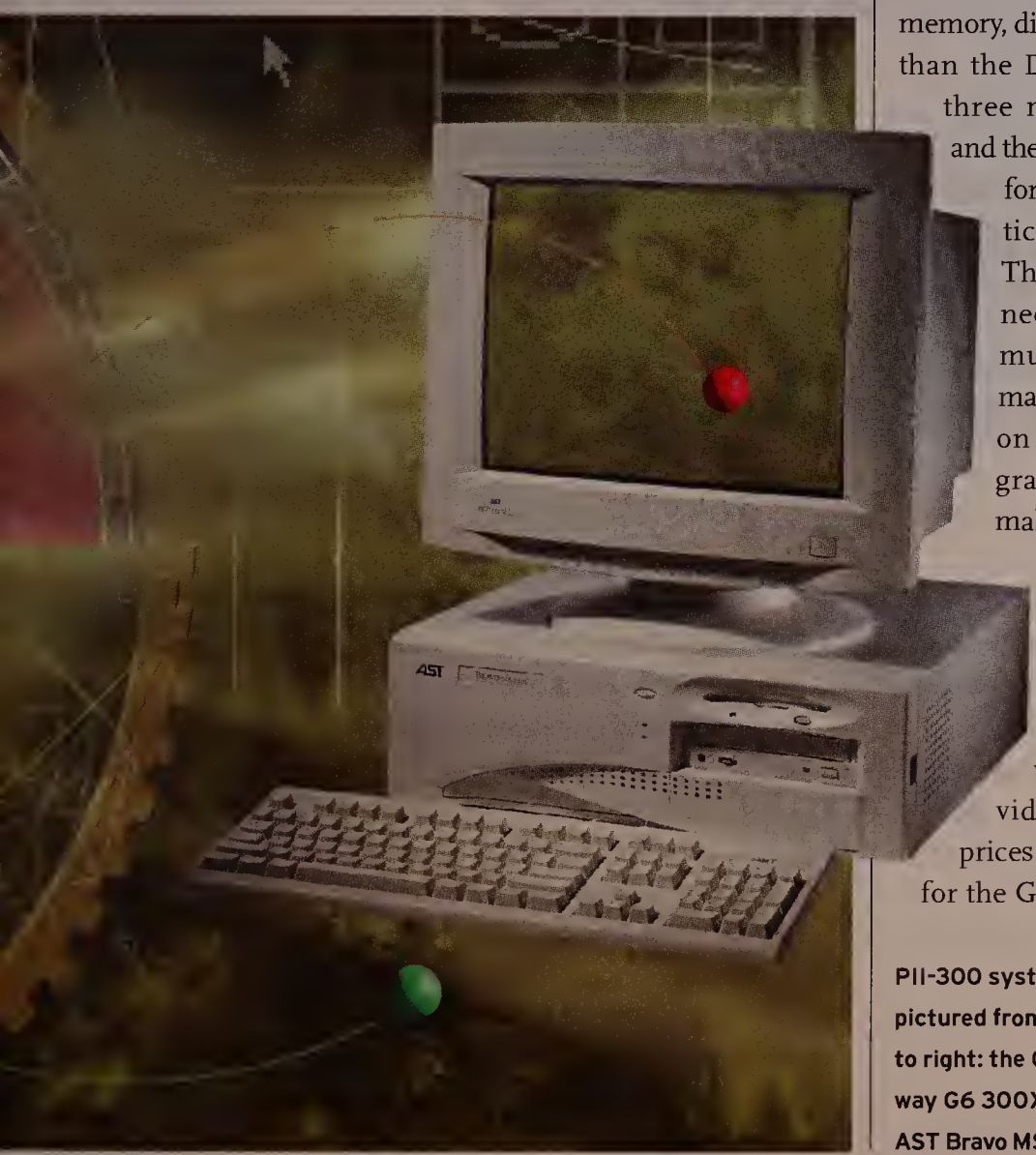
BY A NOSE

IN OUR PC WORLDBENCH business application tests, the NEC Direction SPL 300, the AST Bravo MS-6300, and the Gateway 2000 G6 300XL—all Pentium II-300 systems—did not run significantly faster than the quickest Pentium II-266 machine we've tested, Dell's new $3099 Dimension XPS D-266. In fact, the fastest PII-300, the Gateway 2000, ran only 3 percent faster than the Dell Dimension in business applications. That's not enough of a difference to notice in everyday work.

But the multimedia story was different. Some Pentium II-300 systems deserve consideration if you live and die by demanding multimedia applications, particularly Adobe Photoshop. The NEC Direction outperformed all the other systems we tested on Photoshop. But note this: It was equipped with a high-quality graphics card and 8MB of expensive on-board WRAM, while the Dell system had just 4MB of SGRAM.

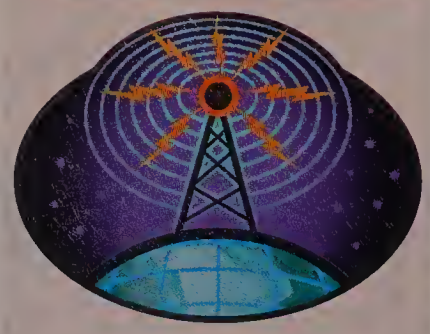
AST's Pentium II-300, with 8MB of SGRAM on its graphics card, also performed faster than the Dell system in two multimedia tests, but wasn't as fast as the NEC on Photoshop. The Gateway 2000, which comes with 4MB of video memory, did only a little better than the Dell in two of the three multimedia tests, and the two machines performed virtually identically on the third. The lesson? If you need top-of-the-line multimedia performance, extra memory on a high-quality graphics card will make a big difference in certain apps.

Of course, a Pentium II-300 computer will cost you plenty, even without the extra video RAM. Street prices are a hefty $3799 for the Gateway 2000, ▶



PII-300 systems pictured from left to right: the Gateway G6 300XL and AST Bravo MS-6300.

JUST IN



Copy Software, Go to Jail

A BILL INTRODUCED in the U.S. House of Representatives would make it a felony to copy software for fun or profit. Under the proposed No Electronic Theft Act, anyone who reproduces ten or more copies of copyrighted software worth over $5000 could spend up to three years in jail. A second offense could put you away for six years. Make fewer copies and you still could be imprisoned for up to a year or fined—or both. Currently you're exempt from criminal charges unless you copy for profit.

Can the Spam

THE DATA PRIVACY ACT introduced in the House would require Internet service providers to tell customers which types of companies have access to their personal data. Customers could block release of their data if they wished. The bill would require that junk e-mail, or spam, include the sender's business name on the subject line. The bill would also order the computer industry to prepare voluntary guidelines for implementation. One consumer group isn't impressed. "It's not clear to me that the self-regulatory approach will be enough," says Diedre Mulligan of the Center for Democracy and Technology. ▶

INTERNET

GET UP-TO-THE-MINUTE NEWS, including RealAudio daily news summaries, hot game demos, the latest reviews, and productivity shareware, at PC World Online. Just point your browser to www.pcworld.com/news.

PII-300: New Leader by a Small Margin

PII-300 AND PII-266: NECK AND NECK

SYSTEMS	CPU	RAM (MB)	PC WorldBench score
Gateway 2000 G6 300XL	Pentium II-300	64	272
AST Bravo MS-6300	Pentium II-300	64	270
NEC Direction SPL 300	Pentium II-300	64	270
Dell Dimension XPS D-266	Pentium II-266	64	264
Average of six desktops	Pentium II-266	64	261
Average of ten desktops	Pentium II-266	32	260
Average of four desktops	Pentium II-233	32	248

Faster ◀ Application test times ▶ Slower

Minutes 0 10 20

All systems had 512K of secondary cache.

Word 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · WordPerfect 6.1 for Windows · Excel 7.0 for Windows 95 · Paradox 5.0 for Windows · 1-2-3 release 5 for Windows

NEC PII-300: THE MULTIMEDIA CHAMPION

SYSTEMS	CPU	Graphics memory on card	Director movie viewing (frames per second)
			Higher is better
NEC Direction SPL 300	Pentium II-300	8MB WRAM	97
AST Bravo MS-6300	Pentium II-300	8MB SGRAM	97
Gateway 2000 G6 300XL	Pentium II-300	4MB SGRAM	88
Dell Dimension XPS D-266	Pentium II-266	4MB SGRAM	87
Average of six desktops	Pentium II-266	[1]	93
Average of three desktops	Pentium II-233	4MB VRAM	91

Faster ◀ Application test times ▶ Slower

Minutes 0 1 2 3 4

[1]Five systems had 4MB, one had 8MB.

Photoshop image editing · Ray Dream Studio 3D redraw

How We Test

Business applications: We tested all systems with PC WorldBench, PC World's Windows 95 application-based benchmark. Higher scores are better. For a description of PC WorldBench 1.0 tests, see PC World Online (www.pcworld.com).

Multimedia applications: We tested each system using a series of MMX-enabled applications. In Adobe Photoshop 4.0, we time several image editing operations. In Fractal Ray Dream Studio 4.1, we time how long it takes to redraw rendered 3D scenes at two levels of complexity. In Macromedia Director 5.0, we play a graphics-intensive Director executable file.

Data based on testing conducted by the PC World Test Center. All rights reserved.

$3499 for the NEC, and $4080 for the AST—that's $400 to $1000 more than the speedy Dell system. (Dell also offers a Pentium II-300 version of its Dimension machine for $3299.)

ABC'S OF LX AND AGP

THERE IS ONE new technology that you should pay some attention to: Intel's new 440LX chip set. Whether you're buying a Pentium II-266 or Pentium II-300 system, make sure it has this chip set. For now, the issue isn't performance; it's investment protection.

PC World previously tested six Pentium II-266 systems—all of them based on the older FX chip set and using 64MB of RAM—and arrived at an average PC WorldBench score of 261. For ten other Pentium II-266 systems with 32MB of RAM, the average score was 260. Those numbers are quite close to those of the Dell Dimension XPS D-266 and the Pentium II-300 PCs that we tested for this article.

The LX chip set—which you'll find on more and more Pentium II motherboards this year—helps protect your PC investment. It supports four new technologies: Ultra-DMA hard drives, Instant On power specs, Synchronous DRAM, and Accelerated Graphics Port. The older FX and TX chip sets don't support AGP, although the TX does support the other three technologies.

Ultra-DMA hard drives are between 2 percent and 10 percent faster than Enhanced IDE drives. The Instant On technology lets your PC fall into an efficient sleep mode, then wake up to do an automated task (like downloading a Web page) or to resume work where you left off, with all apps running. SDRAM is a new type of memory that's slightly faster than the widely used EDO RAM. All four systems tested here have Ultra-DMA hard drives and 64MB of SDRAM.

Accelerated Graphics Port technology, which for more than a year has been billed as a major advance, provides an internal, direct route between a graphics card and the PC's main memory. An AGP-compliant card, used in a system with the 440LX chip set, is designed to speed up sophisticated graphics rendering, such as in a 3D game with many textures, a virtual reality scene, or a complex photo in an image editing application.

While a PCI graphics card works with your system's

33-MHz PCI bus (a pipeline it shares with other components), AGP is a 66-MHz dedicated bus just for graphics. However, almost none of the software programs you use today will push a graphics card hard enough to really take advantage of AGP, and none of it is written specifically to harness the technology. "AGP is a foundation that you can develop new software for," says Joe Van De Water, Intel's marketing manager for the 440LX chip set. "But the Pentium II processor with AGP is not going to run Quake or Excel better."

Mike La Tondre, Intel's engineering manager for the 440-LX chip set, is even more blunt: "I don't expect you'll see much improvement with old software," he says. And we didn't. To see what an AGP card would do for popular software, we ran the AST Bravo MS-6300 through ten graphics-intensive tests under Windows 95 OSR2.1. The tasks were done first with an AGP card and then with a PCI graphics card, both from ATI. Both production-level cards had 4MB of SGRAM. The tasks included playing sequences from 3D games, running an AVI file using Windows 95 Active Movie, using a Web browser to look at an animated VRML world, and constructing a multimedia Microsoft PowerPoint presentation. In every task, the Bravo's performance was virtually identical with the AGP and PCI graphics cards.

As Intel will tell you, AGP is a work in progress. Software developers are just now writing applications that will take advantage of it—and these apps won't arrive in force until 1998 (see "AGP Will Make a Difference—Next Year"). And graphics board vendors have just started shipping the first AGP cards. As with today's PCI accelerators, developers are able to make small changes that make one card faster than another on certain tasks. But until more AGP cards ship and are tested, sorting out which ones are best simply by reading an ad or perusing a spec sheet will be virtually impossible.

Almost none of today's software takes advantage of Accelerated Graphics Port.

Above: Dell's speedy $3099 D-266.

The bottom line? There is absolutely no reason to run out and buy a new computer just to take advantage of Accelerated Graphics Port. These cards add $150 to $200 to the cost of a system and won't benefit you much right now. The four machines that we tested for this review are good for multimedia, but AGP doesn't play a role in their success.

DOWN TO BUSINESS

THE NEW Pentium II-300 systems make quick work of business and multimedia applications. In our PC WorldBench tests, which measure performance in common business apps, the Gateway G6 300XL scored 272, the highest we've ever recorded. It was followed by the AST Bravo MS-6300 and the NEC Direction SPL 300, each of which scored 270.

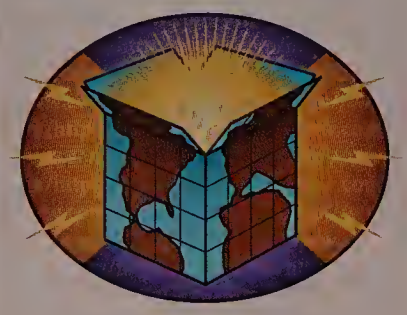
But let's put those scores in perspective. The 266-MHz Dell Dimension XPS D-266 earned a score of 264, only 3 percent lower than that of the Gateway Pentium II-300. (By comparison, the average PII-233 with 32MB of RAM scored 248, and the average PMMX-233 scored 238.)

Are you surprised by the minimal difference in performance between the Pentium II-266 machine and the PII-300s? Industry analysts aren't. "Just cranking up the processor clock doesn't result in a linear improvement in performance," says Dean McCarron, principal analyst at Mercury Research. There are a couple of issues to remember, he says. First, the Pentium II chip's secondary cache operates at half the speed of the processor, so a PII-266's cache works at 133 MHz and a PII-300's at 150 MHz—not a huge difference. Second, today's Pentium II PCs have a 66-MHz system bus, which most of the components use to communicate with the CPU. Until the system bus gets faster, it remains a performance roadblock.

Analysts predict that PC speeds will improve sig- ▶

Merger Could Mean Lower-Cost PCs

ONE OF INTEL'S CHIEF rivals in the CPU market, Cyrix, plans to merge with another chip maker, National Semiconductor, and focus on manufacturing processors for low-cost computing devices such as basic home PCs, Network Computers, and Internet appliances. Cyrix will continue to make its MediaGX processors, which run Compaq's line of low-cost Presario home systems, and 6x86MX processors, which compete with Intel's high-end Pentium II and Pentium MMX chips. Cyrix and National Semiconductor also announced that they intend to use an improved version of the MediaGX chip for very low-cost home computers—systems that may cost as little as $700 with a monitor.



TidBytes

SURFING MOUSE: Kensington Microware's $50 Internet Mouse has four programmable buttons and software features that let it scroll up and down and zoom in and out. If you click the two top buttons at the same time, a pop-up menu lets you launch a browser and view favorite Web sites.

DICTATE FOR LESS: Dragon Systems slashed the list price of its breakthrough dictation package, NaturallySpeaking Personal Edition, from $695 to $349, for a street price of about $200. In addition, IBM announced that its ViaVoice, the first competing product, will sell for $99, down from a previously announced $199.

AGP Will Make a Difference—Next Year

ACCELERATED Graphics Port technology won't speed up the programs you use now (see chart), so what will a PC with Intel's 440LX chip set and an AGP graphics card give you today? Mostly investment protection. But in the future, 3D software for games and business could look radically different as AGP comes into its own.

Here's why: With a PC sporting the 440LX chip set and an AGP card, there's a direct route from the graphics card to the system's main memory. So software developers can build programs much richer than those designed for PCs with 4MB or 8MB PCI-based graphics cards—3D games should approach arcade quality, offering lush textures and impressively fast redraw.

The first few AGP games will show up by year-end, but don't expect many until mid-1998. Upcoming business apps will take advantage of AGP too, but only a few will be available in the near future. There's talk of 3D interfaces to mainstream productivity apps, but so far there hasn't been much more than talk.

AGP Wish List

HERE'S A PEEK at what's coming in 1998:

❒ Revamped desktop publishing and graphics programs could use AGP to quickly draw and edit images and pages. That means less waiting and perhaps more complex effects.

❒ New data-mining or data visualization programs—still works in progress—will take large chunks of information from corporate databases and render them in 3D form on your screen.

❒ More Web pages will use VRML to create 3D environments. A PC with better graphics performance will help you move quickly and smoothly through VRML pages. For example, a Web page with VRML can let you explore a 3D shopping mall or brew pub, or give you a rich visual lesson in how the heart works.

❒ Technical training for employees will be possible from a Web site, Intel says. For instance, a company could post a complex 3D explanation of a particular assembly process.

And note this: A new Intel chip set—the 440BX—and even faster AGP implementations are expected to arrive in PCs in 1998, along with the new software.

AST BRAVO MS-6300	PowerPoint 97 (sec)	Terracide (frames per sec)	VRML (frames per sec)
With 4MB AGP card	139	38	48
With 4MB PCI card	139	37	48

HOW WE TEST Each application is tested using a PCI card and an AGP card, both from ATI. In PowerPoint 97 we import bit maps, change fonts, apply effects, and perform related tasks. We use a special version of Terracide equipped for frame counting. For VRML, we open a virtual world with animations in Netscape Navigator 3.01. Data based on testing conducted by the PC World Test Center. All rights reserved.

nificantly when Intel ships yet another chip set—the 440BX—which is expected to appear in PCs in fall 1998. The BX chip set allows for a 100-MHz system bus, and 100-MHz SDRAM is expected to ship at the same time. Communication between the CPU and other components will speed up considerably, which should result in noticeable performance gains, says Peter Glaskowsky, senior analyst for *The Microprocessor Report*.

Some of the Pentium II-300 systems we tested shined in multimedia performance, compared to earlier PII-266s. But this wasn't simply because of their CPUs: More system and video memory helped, too.

FASTEST MULTIMEDIA

IN PC WORLD'S MMX benchmark tests, the NEC Direction SPL 300 was fastest overall, thanks to its quick Number Nine graphics card with 8MB of WRAM. The NEC ran 97 frames per second on the Macromedia Director test (higher is better); it completed the Photoshop test in 53 seconds (lower is better) and the Ray Dream Studio 3D test in 44 (lower is better). Compare these scores to the average for Pentium II-266 machines with 32MB of RAM, which ran 93 fps in Macromedia Director and handled the Photoshop and Ray Dream tests at 98 and 57 seconds, respectively. That means the NEC runs about 4 percent faster in Director, a whopping 85 percent faster in Photoshop, and 30 percent faster in Ray Dream. But keep in mind that the NEC has 64MB of RAM compared to the PII-266s' 32MB; the added memory helped raise the Photoshop score in particular. The NEC also did particularly well on one of the three tasks in the Photoshop test—the Gaussian blur filter operation. Its Number Nine graphics card contains a display list processor that apparently speeds up tasks involving a quick succession of small graphics commands, says Craig Jones, the card's product manager.

The AST Bravo MS-6300 performed almost identically to the NEC, but it was slightly slower in the Photoshop test. The Gateway G6 300XL was slower than either the NEC or AST systems in Director and Photoshop, but it's still a fast multimedia performer.

Now, consider the Dell Dimension XPS D-266, a Pentium II-266 PC: It ran a bit slower than Gateway 2000's Pentium II-300 on the Photoshop test, but it was considerably slower than NEC's Pentium II-300 on the same test. The Dell tested to within 10 percent of all the Pentium II-300s on the Ray Dream and Director tests. These differences are a concern if your job primarily involves high-end multimedia work, but for other people the Dell Pentium II-266 is a better buy.

THE FINE PRINT

ALL FOUR PCS are outfitted for people who want a top multimedia system: Each has a 12X/24X CD-ROM drive.

The NEC Direction SPL 300 provides you with a 17-inch monitor, a 6.4GB hard drive, and a Number Nine Revolu-

PHOTOGRAPH: JOHN GREENLEAF

tion 3D AGP graphics card with 8MB of WRAM, as well as an Iomega Zip drive.

The Gateway G6 300XL comes with an impressive 19-inch monitor that fits in the desk space of a typical 17-inch model, an STB Velocity AGP graphics card with 4MB of SGRAM, an 8GB hard drive, and a Telepath 56-kbps modem with 3Com/U.S. Robotics' x2 technology. This system is pricey, but the monitor and excellent Boston Acoustics sound system with subwoofer will please.

The AST Bravo MS-6300 gives you the least for your money in terms of configuration: The system includes a 17-inch monitor, an ATI Rage II+ 3D AGP graphics card with 8MB of SGRAM, and a 4.3GB hard drive. The AST does have an easy-open chassis, plus noise reduction technology that makes the machine unusually quiet. But that doesn't justify the cost: The 266-MHz Dell system packs in more than the AST and costs $981 less.

Despite its relatively low price, the Dell Dimension comes with top-quality components: You get a 17-inch monitor, an STB Velocity AGP graphics card with 4MB of SGRAM, an 8.4GB hard drive, a 12X/24X CD-ROM drive, and a U.S. Robotics Sportster 56K modem.

Finally, consider system reliability and support. Dell earned a top rating for both in *PC World*'s ongoing reader poll. While Gateway 2000's support was highly rated, its system reliability was rated only fair. AST and NEC were rated poor in both categories.

The NEC Direction SPL 300 was fastest overall in multimedia, thanks to its quick Number Nine graphics card with 8MB of WRAM.

THE BEST BETS FOR NOW

ADD IT ALL UP and it's clear that the Pentium II-300s are the best machines for the toughest multimedia jobs. But for most people, Pentium II-266s are the better buy.

There's not much point in delaying your PC purchase, unless you can wait until late in the year. The price of budget-friendly Pentium MMXs will continue to fall in the coming months. However, Intel won't be cutting PII-266 chip prices until November, so you won't see any huge PC price drops until Christmas, says Linley Gwennap, editor of *The Microprocessor Report*.

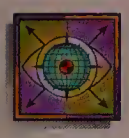
So resist buying what you don't need. If you're in the market right now and your job doesn't depend on the absolutely fastest multimedia performance, a 266-MHz Pentium II with the 440LX chip set may be best—it's a fast machine that won't soon be outdated.

—*Laurianne McLaughlin*

- **AST Bravo MS-6300 $4080** street; 800/876-4278; www.ast.com
  READER SERVICE NO. 787
- **Dell Dimension XPS D-266 $3099** street; 800/388-8542; www.dell.com
  READER SERVICE NO. 788
- **Gateway 2000 G6 300XL $3799** street; 800/846-2000; www.gw2k.com
  READER SERVICE NO. 789
- **NEC Direction SPL 300 $3499** street; 888/863-2669; www.nec-computers.com
  READER SERVICE NO. 790

WEB BROWSER

Need a Job? Hit the Net



FOR MOST OF US, job hunting ranks right up there with a trip to the dentist or filling out tax forms. The World Wide Web seems like a good place to look for help—until you get 4600 hits on a Yahoo search for 'employment', that is.

But don't turn off the computer just yet. A number of well-organized Web sites can take some of the pain out of looking for a job. And if you're thinking about moving to another part of the country, searching for work online is one heck of a lot easier than subscribing to a slew of out-of-town newspapers.

America's Job Bank (www.ajb.dni.us), with 200,000 listings collected from 1800 employment offices around the country, is one of the best job search sites on the Web. It's intelligently planned: Jobs are divided into 40 categories and a number of subcategories, and listings can be sorted by city, salary, or amount of experience required.

CareerMosaic (www.careermosaic.com) offers 20,000 jobs, including many foreign listings. Its search mechanism requires a little more work than that of America's Job Bank, but it lets you zero in on a specific type of job you might otherwise miss.

Many sites, including CareerMosaic and The Monster Board (which boasts 50,000 jobs at www.monster.com), offer free career counseling and will e-mail job listings to you.

THE MONSTER BOARD: 50,000 listings take some of the pain out of job hunting.

I decided to take advantage of one such tool, Career Builder's Personal Search Agent (www.careerbuilder.com). After choosing a job category, regional preferences, and keywords, I was promised e-mail with job listings that fit my profile. After waiting ten days I received only one job listing in my chosen field of journalism, but when I posed as a wanna-be accountant, 30 listings were returned in a few days.

A lot of the sites I visited were geared to high-tech openings. In early August, Jobs America (www.jobsamerica.com) listed 383 jobs for Advanced Micro Devices alone. But even if you're not an engineer, using the Web effectively will keep your next job search from feeling quite so much like a root canal.

—*Daniel Meisler*

Pentium MMX-233 Notebooks Break Speed Records

NOTEBOOK manufacturers have been fighting a losing battle to build portable systems that can match high-end desktop PCs in performance. Though vendors load new notebooks with oversize active-matrix color screens, multigigabyte hard drives, and a profusion of other premium features, processor power has generally lagged behind. Until now, the fastest Intel-compatible notebooks have used Pentium MMX-166 CPUs—not exactly cutting-edge technology considering that desktop PCs based on the new Pentium II chip have raced to 300-MHz clock speeds.

Intel's new mobile Pentium MMX-233 CPU narrows the performance gap. Designed for use in notebooks, the new 233-MHz chip is at the heart of the three fastest notebooks we have ever tested—preproduction units from Gateway 2000, NEC, and Quantex. In addition, we saw early Pentium MMX-233 notes from IBM and Toshiba, but neither of those were available in time for benchmark testing. Prices range from $3349 for Quantex's Meridian H233 to $7000 for IBM's top-of-the-line ThinkPad 770.

Our testing of the PMMX-233 models showed a moderate increase in speed over the fastest portable PCs currently available. Based on previous experience, we expect that the shipping notebooks will be slightly faster than the preproduction units we tested. With its PC WorldBench score of 242, even the fastest of the PMMX-233 machines—Gateway 2000's Solo 9100-233—was only about 10 percent quicker than the speediest PMMX-166 notebooks we've tested, from Micron and Gateway. Of the other PMMX-233 notebooks, NEC's Versa 6230 bested the top Pentium MMX-166 units by about 5 percent, and the Quantex Meridian H233 nosed them out by 3 percent. (The Meridian's slower finish is understandable, though, because it had 16MB of RAM, versus 32MB for the other notes.)

FASTEST of the fast: Gateway 2000's Solo 9100-233 notebook captured top honors in our lab tests.

Still, the first PMMX-233 notebooks, unlike many portables, perform on par with comparably equipped desktop PCs. The Solo 9100-233, which incorporates beefy features such as 4MB of video memory and 512K of secondary cache, completed our tests in a virtual tie with the fastest PMMX-233 desktop we've tested, Dell's Dimension XPS M233s.

LOWER WATTAGE, LONGER LIFE

WHY DO THE FAST new CPUs take a while to make their way into portable systems? The desktop versions of the chips are power hogs that quickly deplete a notebook's battery power. As a result, Intel must spend additional time developing mobile versions of the processors that require less juice. Most of the notebooks we've tested based on desktop PMMX-200 chips haven't even eked 2 hours of power out of a battery charge. Moreover, the portable PCs based on desktop PMMX-200 chips lagged the fastest units ▶

PMMX-233 NOTES: FASTEST TO DATE

SYSTEMS	CPU	RAM (MB)	PC WorldBench score
Gateway 2000 Solo 9100-233	Pentium MMX-233	32	242
Average of three desktops	Pentium MMX-233	32	240
NEC Versa 6230	Pentium MMX-233	32	231
Quantex Meridian H233	Pentium MMX-233	16	227
Micron Transport XKE P166 A[1]	Pentium MMX-166	32	221
Average of six notebooks	Pentium MMX-166	32	204

All systems had 512K secondary cache.

◀ Faster — Test times — Slower ▶

Minutes 0 5 10 15 20 25 30

Word 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · WordPerfect 6.1 for Windows · Excel 7.0 for Windows 95 · Paradox 5.0 for Windows · 1-2-3 release 5 for Windows

[1]Tied with Gateway 2000's Solo 9100-XL for fastest notebook previously tested.

HOW WE TEST All systems are tested with PC WorldBench, *PC World*'s application-based benchmark. Higher PC WorldBench scores are better. For a description of PC WorldBench 1.0 tests, see PC World Online (www.pcworld.com/testing). Data based on testing conducted by the PC World Test Center. All rights reserved.

PHOTOGRAPH: JOHN GREENLEIGH

what's the DIFFERENCE?

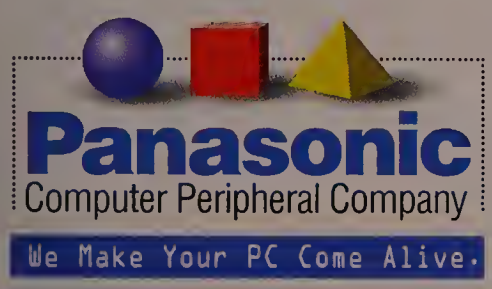
PRECISION.
PERFORMANCE.
PERFECTION.

Panasonic PanaSync/Pro™ monitors give you the edge you need for high-end graphics. Like our revolutionary Perfectly Flat PF70 monitor— it gives you exceptional clarity, near-zero reflectivity and precision representation of every item on the screen. Our Pro P70 offers excellent dot pitch and high refresh rates. And, our award winning Pro P21 is constantly receiving industry praise for being simply the best overall monitor choice you can make. Take a look at our specs:

Model	P50	P70	PF70	P21
Pitch (mm)	0.27 (dot)	0.25 (dot)	0.24 (stripe)	0.25 (dot)
Max. Res. NI (H X V)	1280 X 1024	1600 X 1280	1600 X 1280	1800 X 1440
H-Scan (kHz)	30 - 70	30 - 86	30 - 86	30 - 115
Viewable Area	14.0"	16.0"	15.9"	20.0"

And if you're concerned about customer support, take a look at our program— it's the most extensive warranty and customer support program in the industry. Our 3-Year Limited Warranty on parts, labor and the CRT, 1-Year On-Site Exchange Program, and 24-Hour, 7-Day Customer Support Hotline, all at no additional cost, adds value you won't get from the competition.

So take a look at the PanaSync/Pro™ Series designed for today's professional graphic environment and see what monitor precision, performance and perfection are all about.



1-800-742-8086 ext. MN20

www.panasonic.com/alive

Circle 166 on reader service card

PanaSync/Pro™ P21

PanaSync/Pro™ P70

PanaFlat™ PF70

P21 P15 P21, P17 PF70

Send a crying baby 3,000 miles
in under 2 minutes.
Because You Can.

and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Screen image is simulated. *Requires additional hardware and software. SOITA-07

Now the newest member of your family can travel the world long before ever taking that first big step. With, of course, a little help from the new Sony VAIO Notebook. Just wirelessly download your favorite shots from your VAIO Sony Digital Still Camera, and e-mail them to family, friends and co-workers anywhere — perhaps even with a little sound byte from the one-toothed wonder. For refrigerators all over the world, kick out a few precious moments using the All-in-One Printer. Then, if you absolutely must, get a little work done while the two of you listen to lullabies on your VAIO speakers. Talk about bonding time.

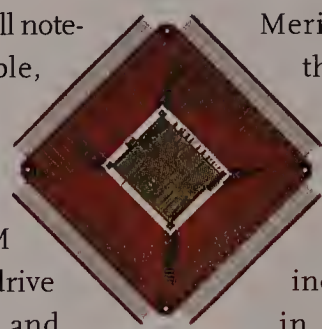
SONY

based on mobile PMMX-166 processors in our tests.

For the mobile version of the Pentium MMX-233 processor, Intel came up with a design that consumes just 5.5 watts of power (compared with about 17 watts for the desktop CPU). In our tests, such efficient use of power translated into battery life that ranged from respectable to impressive—more than 4.5 hours for the Gateway 2000 machine, over 3.5 hours for the NEC, and nearly 5 hours for the Quantex.

PACKED OR PETITE?

BEYOND THEIR USE of the PMMX-233 processor, most of the notebooks we tested also share a similar design philosophy: Cram in as much neat stuff as you can—weight and price be damned. Gateway 2000's Solo 9100-233, NEC's Versa 6230, and Toshiba's Tecra 750CDT all have big, beautiful 13.3-inch active-matrix screens, and each has one feature that sets it apart from run-of-the-mill notebooks. For example, the $4999, 10.4-pound Gateway lets you use both its CD-ROM drive and floppy drive at the same time; and the $5299, 9.8-pound NEC has an optional LS-120 drive that handles standard 1.44MB floppies plus those that hold 120MB of data. The $6799, 10.7-pound Toshiba comes with a candy bar–size, clip-on video camera for videoconferencing and image capture.



POWER saver: The mobile PMMX-233

IBM's new $7000 ThinkPad 770 ups the ante with a 14.1-inch active-matrix screen (one of the first of that size available in any notebook) and an optional DVD-ROM drive.

The one notebook we review here that doesn't subscribe to the more-is-never-enough philosophy is Quantex's Meridian H233, one of the company's first portable PCs. The configuration we tested sported a smaller 12.1-inch screen and little in the way of flashy extras. But the $3349 price is certainly right, and at 7.6 pounds the Meridian is positively petite compared with the other notebooks here.

Even if your notebook needs are modest and these prices seem steep, the 233-MHz Pentium MMX is still good news, because it should drive down prices for portables based on lesser processors. And if 233-MHz MMX performance in a mobile PC sounds a little humdrum to you, wait until the first half of 1998. That's when Intel plans to deliver the first Pentium II processors designed for notebooks.

—Harry McCracken

• Gateway 2000 Solo 9100-233
Gateway 2000, 800/315-2536, www.gateway.com
Price: $4999 as tested
READER SERVICE NO. 781

• IBM ThinkPad 770
IBM, 800/426-2968, www.us.pc.ibm.com
Price: $7000 as discussed

• NEC Versa 6230
NEC, 888/863-2669, www.nec-computers.com
Price: $5299 as tested
READER SERVICE NO. 782

• Quantex Meridian H233
Quantex, 800/896-4898, www.quantex.com
Price: $3349 as tested
READER SERVICE NO. 783

• Toshiba Tecra 750CDT
Toshiba, 800/334-3445, www.computers.toshiba.com
Price: $6799 as discussed
READER SERVICE NO. 784

PHOTOGRAPH: (TOP) JOHN GREENLEIGH; (BOTTOM) GLENN CORMIER/IN SITE

Satellites, Radio, and Super Wireless for New High-Speed Net Access

TIRED OF doing the Web crawl? Your telephone and cable TV companies are testing high-speed solutions to the problem—ranging from Asymmetric Digital Subscriber Line (ADSL) phone service to cable modems—that may come to your street one day. But you might be in for a long wait if you live in a crowded metropolis where upgrading telecommunications infrastructure and wiring is difficult, and especially if you live in a rural area where premium communications services are often rolled out last (or not at all).

New wireless technologies—satellite, radio, and super wireless—offer more options. All these digital technologies provide comparable bandwidth, are competitively priced, and install faster than many existing wired solutions. But some of these wireless technologies may take a year or longer to get to your neighborhood.

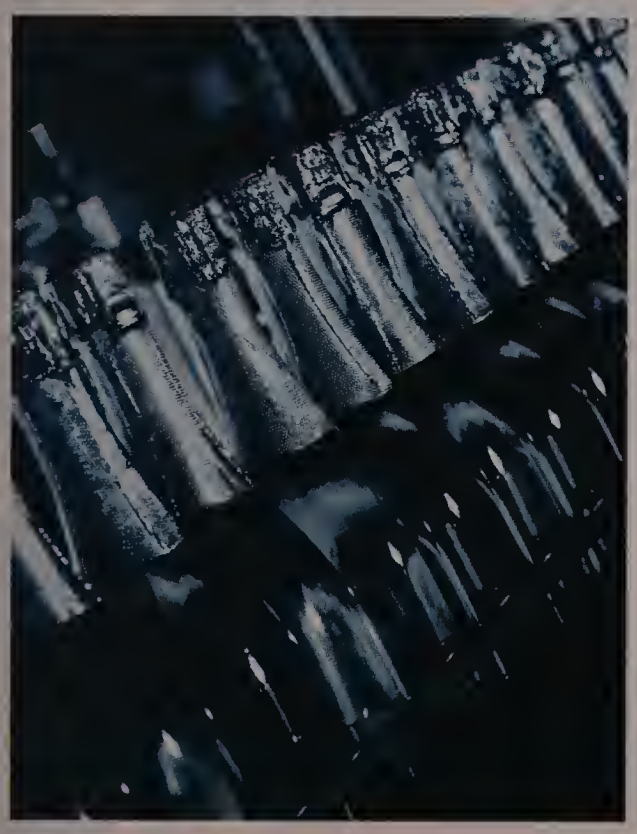
DOING DISHES

RIGHT NOW, HOWEVER, you can get 400-kilobits-per-second downloads from the Internet and access to 200 TV channels anywhere in the United States with the DirecDuo satellite dish from Hughes Network Systems. The DirecDuo combines the television features of Hughes's DirecTV and Internet features of DirecPC dishes, which have been available separately for a year. The DirecDuo is slicker—and more expensive—than the other dishes that Hughes offers.

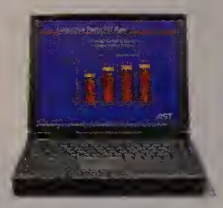
You can buy DirecDuo from stores like CompUSA for $899 to $999, depending on the extra television features you crave. Internet access is available in at least four pricing ▶

FAST WIRELESS Net access options, such as this 400-kbps Hughes DirecDuo satellite dish, are coming to a rooftop near you.

INTRODUCING THE PERFECT NOTEBOOK FOR 1997. AND 1998. AND 1999...



AST® introduces the long-term notebook solution. It's very simple. The Ascentia™ M Series from AST provides a full range of powerful technologies designed to support shared peripherals. So, now you don't have to worry about which docking station goes with what notebook, because docking stations and peripherals are common throughout the line, including the next generation of Ascentia notebooks. The result is a simplified notebook solution that will make your job easier today and tomorrow. Visit us at www.ast.com for more information about AST Ascentia M notebooks featuring Intel® Pentium® processors with MMX™ technology. Or call us at 1-800-945-2278.



Ascentia M

Up to 233 MHz Intel Pentium processor with MMX

12.1" DSTN to 13.3" XGA TFT Active Matrix screen

32 to 64 MB RAM expandable to 128 MB

512 KB L2 cache

Up to 4.0 GB UltraDMA hard disk drive

20X maximum speed CD-ROM

Universal Serial Bus and CardBus

Lilon battery

Three docking solutions

Includes choice of Microsoft® Windows® 95 or Windows NT® 4.0

AST® COMPUTER

Working for your business.™

MMX™ intel inside® pentium® PROCESSOR

© 1997 AST Research, Inc. All rights reserved. AST and the AST Logo are registered trademarks and Working for your business and Ascentia are trademarks of AST Research, Inc. Intel, the Intel Inside Logo, and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

© Copyright 1997 Novell, Inc. All rights reserved. Novell is a registered trademark and
Rock the Net and NDS are trademarks of Novell, Inc. in the United States and other countries.
Windows is a registered trademark of Microsoft Corp.

IT'S NOT A PUZZLE.

(It's a network.)

No matter how you put it together, we live in a networked world.

And no one knows networks like Novell.

We pioneered PC networking.

And, with our open standards approach, we're building on that expertise to enable future networking revolutions.

We're extending the power of existing networks and the return on existing investments.

And we're creating unique solutions such as Novell BorderManager and NDS™ for NT—the industry's only directory services solution that enhances the flexibility and manageability of Windows® NT environments with an open architecture and single-point administration for lower cost of ownership.

Networks are getting bigger, faster and more complex, embracing more users and more resources on more platforms in more places.

And the Internet is effectively the ultimate network, the network of networks.

But that's the point: They're all networks.

And Novell has the tools and technologies to put all the pieces of the networking puzzle together for you.

www.novell.com

Novell®

MAKING WAVES: WIRELESS, HIGH-SPEED NET ACCESS

TECHNOLOGY	Estimated costs	Estimated download/ upload speed	Availability	Comments
Hughes Network Systems DirecDuo satellite	$300 installation fee[1]; $899 to $999 for dish; $20 to $130 per month[2]	400 kbps/33.6 kbps (via analog modem)	Anywhere	Combines Internet and TV access even in remote areas.
Super wireless	$199 installation fee[1]; $50 per month for hardware and Internet access[2]	500 kbps/33.6 kbps (via analog modem)	New York now; other cities in 1998	Least costly wireless option for Internet access, but limited availability.
WinStar digital radio	No installation fee; $225 to $400 per month for hardware and Internet access	1.544 mbps/1.544 mbps	9 cities now; total of 30 by summer 1998	Fastest wireless technology available today.
Teledesic satellite	$1000 for dish; other costs not set at press time	64 mbps/2 mbps	Rollout planned for 2002	Potentially the fastest two-way wireless Internet access.
Motorola Celestri satellite	$750 for dish; other costs not set at press time	16 mbps/2 mbps to 10 mbps	Rollout planned for 2002	Low-cost TV and Internet access anywhere on the globe.
56-kbps modem	$175 for modem[1]	56 kbps/33.6 kbps	Most ISPs support one or both competing 56-kbps technologies	Lack of 56-kbps standard a problem.

[1] Does not include installation or monthly costs of an additional phone line for analog modem.

[2] Does not include cost of TV service.

packages that start at around $20 per month and head skyward to $130 a month for unlimited access. You pay extra for HBO, the Movie Channel, and other premium services.

Then there are the installation costs. If you're comfortable standing on a ladder drilling lag bolts into your roof, you could probably install the DirecDuo dish yourself in a couple of hours (it comes complete with hardware for mounting the device and connecting it to your PC and television).

I opted instead for the standard $249 installation, but I still had to add a 16-bit adapter to my computer and load the software myself. It was worth the effort. Once the DirecDuo received a Web page request (which still must travel upstream at 33.6 kbps through a modem), the page popped onto my screen.

Price Waterhouse's *EMC Technology Forecast: 1998* report claims that by year-end, other providers—such as ASkyB and EchoStar—will launch the same type of high-altitude geosynchronous Earth-orbit (GEO) satellites that Hughes uses. Still other companies plan to blanket the globe with low-Earth-orbit (LEO) satellites that are better for two-way Internet access.

By 2002, start-up Teledesic, a venture spawned by Bill Gates and cellular pioneer Craig McCaw, plans to circle the Earth with 288 LEO satellites providing as much as 64 megabits per second of downstream bandwidth and 2 mbps upstream for less than the cost of GEO service. By then, Motorola hopes to have its Celestri system working. A hybrid combining the best of GEO and LEO services, Celestri will offer 16-mbps downloads and 2- to 10-mbps uploads at even lower prices, according to Motorola.

> By 2002, **Motorola hopes** to offer a satellite service that will download Web pages **at speeds of up to 64 megabits per second.**

SUPER WIRELESS

BUT LESS EXPENSIVE wireless alternatives are already available to some people. The United States' first Local Multipoint Distribution Service using super wireless technology has been deployed in the New York metropolitan area by CellularVision USA. Consumers pay only $50 a month for its CVDN 500 service and bundled hardware, plus a $199 installation fee. That gives you an antenna about the size of a Ping-Pong paddle, an internal digital modem for your PC, and a TV set-top box. Once CellularVision installs it all, you can sign up for the usual TV channels and unlimited Internet access at 500 kbps downstream and at regular modem speeds upstream. Expect CVDN 500 service to be introduced to more major metropolitan areas in the next year or two.

RADIO-ACTIVITIES

ON ANOTHER FRONT, the U.S. government has been auctioning off surplus radio bandwidth that offers Net access speeds starting at 1.544 mbps. One of the first companies to take advantage is WinStar, a New York–based start-up that uses radio towers to transmit voice, data, and video through the phone systems of small and large businesses. The service is now available in nine cities, including Chicago, Los Angeles, and New York, and is planned for 30 cities by summer 1998. The service is also available from some ISPs in other cities.

WinStar charges between $225 and $400 per month; eventually it will be offered to rural consumers in apartment buildings and condominiums. Prices should drop once the service spreads to other areas and when more firms win radio licenses to provide the service, says Doug Morgan, WinStar's vice president.

So relief from the Web wait is definitely on the horizon. Price Waterhouse predicts that no single technology—wired or wireless—will predominate. But the variety of offerings and competitors suggests that you'll be able to find a good solution that suits both your location and your pocketbook.

—*Mike Hogan* ▶

Upgrade Now! APC's Trade-UPS™ Plan boosts Web server power protection

Now you can easily trade in your old UPS for discounts toward enhanced APC protection. Plus, discover the myths and musts of web server protection. See how Smart-UPS® seamlessly integrates with and provides graceful shutdown for major web platforms, including Windows NT and Solaris. The bundled PowerChute plus *WebAgent™ lets users manage their UPS via web browser. Get your FREE handbook today!**

"...inherent flexibility and excellent software... Don't be caught without one."

○ **Yes!** I'm interested in trading up an older APC or competitors' UPS to a Smart-UPS. Please send Trade-UPS information.

○ **No,** but I would like a FREE Handbook!

Name: _____

Company: _____

Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Brand of UPS used? _____ # _____

Brand of PCs used? _____ # _____

Brand of Servers used? _____ # _____

* We regret we cannot fulfill incomplete requests.

Dept. P3-WEB

APC®

888-289-APCC x8162

http://www.apcc.com

PCW 10/97

©1997. APC. All rights reserved. Smart-UPS, Trade-UPS and SmartSlot are trademarks of American Power Conversion. SU02EBRC. Fax: 401-788-2797. Worldwide: (+1) 401-789-0204. PowerFax Literature: 800-347-FAXX.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC®
AMERICAN POWER CONVERSION

DEPT. BRC-P3-WEB
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

Our new Smart-UPS® ensures the web hits you *want*... and prevents those you *don't*

Web-enabled PowerChute® *plus* now ships with every Smart-UPS®

Protect ME! APC

Whether you're using the web to sell or support, once you invest in a web server and operating system, you've made a commitment to yourself, your company and your customers. However, without power protection, you risk losing your expensive software, hardware, and data, and the opportunity to interface with new prospects and existing customers. That's why the world's most reliable power protection is now available to meet your web-based needs.

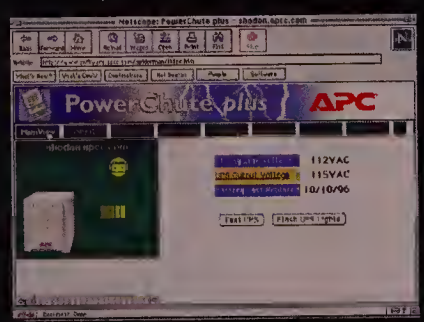
Smart-UPS ensures your web server is always there, like you promised. Don't become a statistic! Power problems damage hardware, and are the leading cause of data-loss.

APC Smart-UPS ensures protection from surges, spikes and lost power. Backed by a $25,000 lifetime equipment protection guarantee, Smart-UPS brings the confidence of APC to the excitement and opportunity of the Web.

All 120V Smart-UPS now include FREE Web enabled PowerChute *plus* software for safe web server and OS shutdown. PowerChute *plus* protects system and data integrity by automatically shutting down server applications and operating systems.

PowerChute *plus*' FlexEvents™ feature can page you when an out-of-bounds environmental condition occurs. APC's NEW WebAgent™ allows administrators to manage their Smart-UPS via their browser. NEW WebAlert™ notifies users of Web server shutdown.

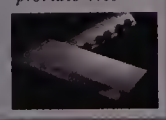
Instead of increasing your risk by waiting, join over 8,000,000 satisfied computer users worldwide who prefer APC to protect hardware and data.



Smart-UPS now ships with PowerChute plus power management software with WebAgent, to make Smart-UPS browser-manageable. (Ships free with 120V Smart-UPS only.)

APC's award-winning Smart-UPS units are available in convenient rack-mount models. The Smart-UPS XL series is recommended for long runtime applications. For maximum protection, ask about our new NetShelter™ premium rack enclosures for all server and internetworking equipment sales.

APC's MasterSwitch™ provides Web /SNMP-manageable, independent control of power to connected loads.



"...inherent flexibility and excellent software. Don't be caught without one"

PC MAGAZINE EDITORS' CHOICE
November 19, 1996
APC Smart-UPS 1000

DELL PowerEdge 2100/200

Check out APC's new web solution by browsing our PowerPage™ at http://www.apcc.com, or assess your risk with our interactive quiz at http://www.apcc.com/english/itool003.htm After all, there's one kind of web hit you and your site can't afford.

To receive FREE information about PowerChute *plus* with WebAgent, just complete this coupon and mail or fax to APC

☐ **YES!** I'd like more information about new PowerChute *plus* software with WebAgent

☐ **NO** I'm not interested at this time but please send my FREE Power Protection Handbook.

Name: _____
Title: _____
Company: _____
Address: _____
_____
City/Town: _____
State: _____ Zip: _____ Country _____
Phone: _____
Brand of UPS used? _____ # _____
Brand of PCs used? _____ # _____
Brand of Servers used? _____ # _____

APC®

(888) 289-APCC x8162
Fax: (401) 788-2797 • http://www.apcc.com

Dept. P3-WEB

1997 APC. All Trademarks are the property of their owners. SU02EF • (800)347-FAXX PowerFax • CompuServe: GO APCSUPPORT • 132 Fairgrounds Road, West Kingston, RI 02892 USA

APC has won more awards for reliability than all other UPS vendors combined.

Circle 17 on reader service card

Coming PC Technologies: Technoparadise or Mere Puffery?

ANALYSIS

TECHNOLOGIES that promise computing nirvana always seem to lie just around the corner. PCs that are easy to set up, upgrade, and maintain have been in the works for years. Over the next two years you can expect to hear about new ports and peripherals that eliminate hardware and software conflicts. And look for built-in diagnostics that can back up a hard drive if it is about to fail, or alert you when someone removes RAM from your system. We have a bridge for sale, too.

It's easy to be skeptical about new technology. Last month we were disappointed by our first tests of Universal Serial Bus, a new technology that was supposed to make upgrading a breeze by offering Plug and Play and the ability to hot-swap devices. Plus, vendor claims that upcoming features will save thousands in support and maintenance are based on a highly controversial report from the Gartner Group earlier this year.

Regardless, many of these future technologies will continue to be hyped, and some will even make it to market. Here's a closer look at their claims, cons, and when—or if—you can expect them.

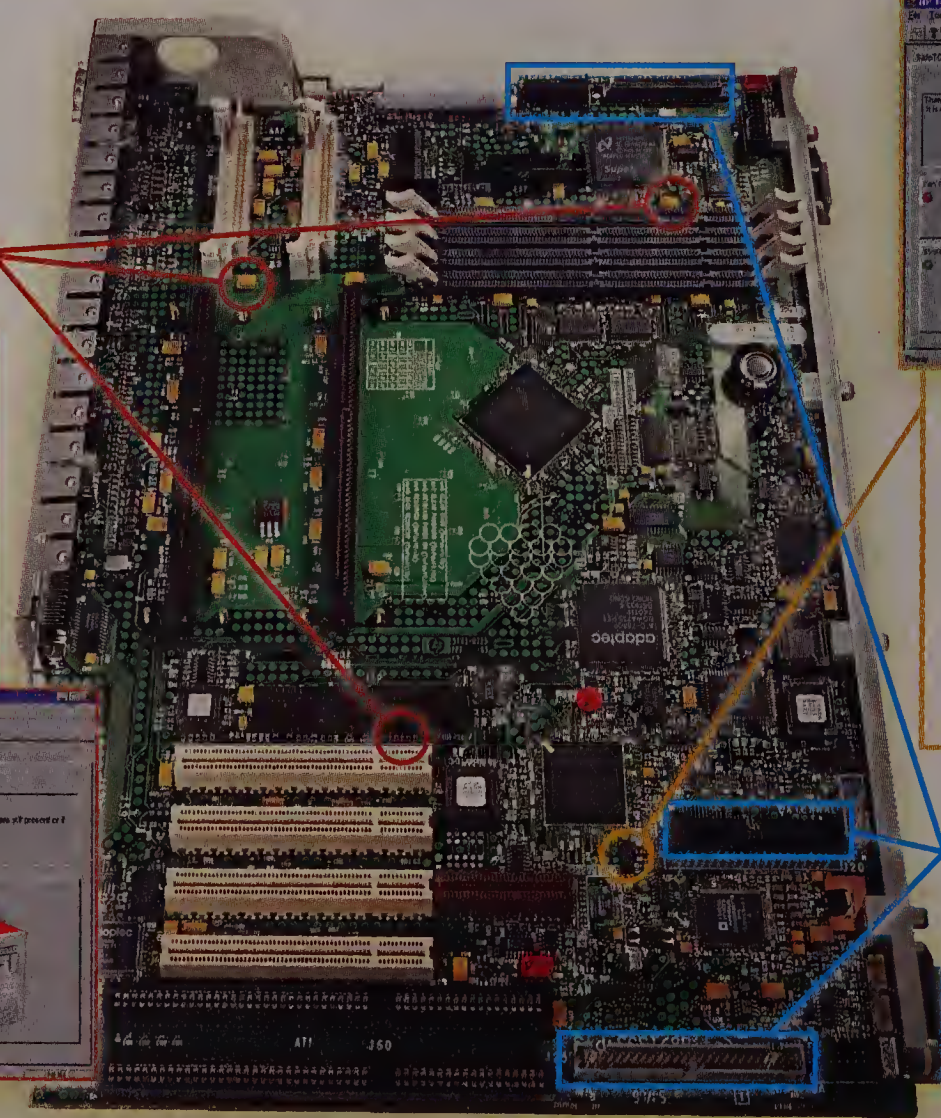
COMING TO PORT

EXPECT TO SEE a more-powerful cousin of USB—the much faster IEEE 1394, or FireWire, connection—on the back of high-end PCs within a year. Like USB, FireWire is supposed to decrease software configuration headaches and to offer Plug and Play and hot swapping. FireWire's maximum 400 megabit-per-second performance is ideal for data-intensive applications such as publishing and digital video. Currently, you can buy a FireWire PCI add-in card for your PC from Adaptec and connect Sony's $3000 Digital Camcorder for transferring digital video to your PC for editing, then copy it back to tape.

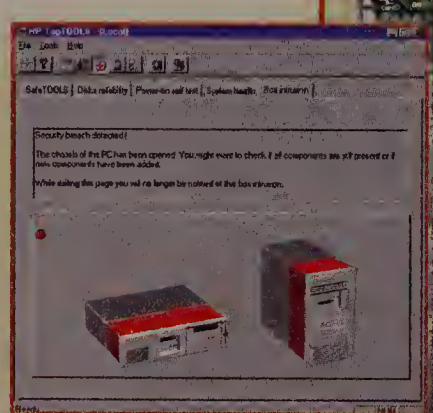
Beyond this year, details get a little sketchy. Although most major hardware makers say they'll support FireWire, industry politics and technical issues could slow the introduction of more peripherals. For example, while major hard drive makers say they're working on FireWire hard disks, booting from those disks will require new BIOSes. The upshot: Though Windows 98 will support the technology, peripherals for mainstream PCs, which also will include scanners, color printers, and DVD-ROM drives, may not appear until 1999. ▶

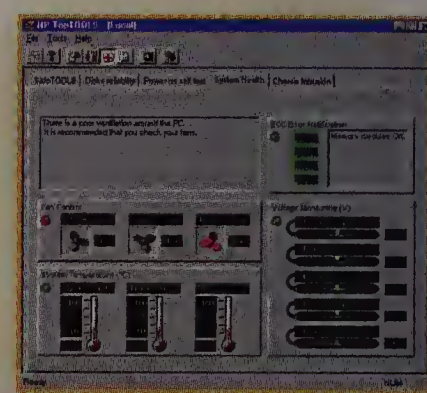
HEWLETT-PACKARD XU MOTHERBOARD

HP's XU WORKSTATION sports several new technologies. Here's a peek under the cover.



TEMPERATURE SENSORS Sensors track processor, motherboard, and hard drive temperatures and control cooling fan speeds or sound an alarm (even shut down the system) in the event of critical overheating.





SYSTEM STATUS The BIOS in HP's proprietary "Little Ben" chip monitors overall system status and using external sensors (not shown) detects when the PC case is opened and whether any components have been changed.

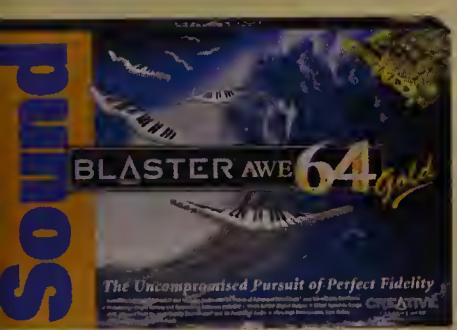
HARD DRIVE CONNECTORS S.M.A.R.T. hard and CD-ROM drives hook up to SCSI (narrow and ultra) and EIDE connectors, and are monitored and controlled through system software.

PHOTOGRAPHS: JOHN GREENLEIGH

THE GREAT 64 GOLD GIVEAWAY
WIN GOLD!
TO ENTER, VISIT US AT:
HTTP://GOLD.SOUNDBLASTER.COM

AWE 64
SOUNDS OF INVASION

1. "We Come In Peace."
2. Blasting Ray Guns.
3. People Screaming.
4. "You Must Believe Me!"
5. Exploding Buildings.
6. Whirring Space Ships.
7. Brains Being Sucked.
8. Bones Crunching.
9. Aliens Phoning Home.
10. Metallic Scraping.
11. Cars Crashing.
12. Kidneys Bursting.
13. Insertion of Probes.
14. Heads Exploding.
15. "Run for Cover!"
16. "Warning."
17. Aliens Melting.
18. Pods Hatching.
19. Destroying the Monster.
20. Buildings Imploding.
21. Spaceships Docking.
22. Boiling Flesh.
23. "Mayday, Mayday!"
24. Exploding Spaceship.
25. People Running.
26. "I saw a UFO!"
27. Planes Taking Off.
28. "We're at DefCon 1."
29. Aliens Communicating.
30. Children Crying.
31. Slurp.
32. Clink of Autopsy Instruments.
33. Laser Swords Crashing.
34. "Hyperspace!"
35. Flesh Being Torn Off Bones.
36. "They're Coming."
37. Wailing Sirens.
38. "You Must Die."
39. "Beam Me Up."
40. Zap!!!
41. Air Locks Closing.
42. "Oh, My God!"
43. Lasers Charging Up.
44. "We Need More Power!"
45. Ray Guns Blasting.
46. Calling the Mothership.
47. Horns Blaring.
48. "We Won!"
49. "Lock on Target!"
50. Crystals Charging.
51. Area 51 Guard: "No Admittance."
52. Zap-Zap!
53. Warning Alarms.
54. Air Locks Opening.
55. "Set to Stun!"
56. "Red Alert!"
57. Shields Up.
58. Warp Speed.
59. "Blast 'em!"
60. Eyeballs Squishing.
61. Spaceships Cloaking.
62. Radar Ping.
63. "Fire at Will!"
64. "Take Me to Your Leader."



The **Sound Blaster® AWE64 Gold™** is ready to invade your multimedia PC. The Sound Blaster AWE64 Gold is simply the best sounding Sound Blaster ever. And it's designed specifically to upgrade your PC's multimedia audio system. Play back up to 64 simultaneous voices, and produce a richer, fuller sound that's out of this world. With 20-bit digital output, audio quality is ncompromised. And, of course, compatibility is assured because it's a genuine Sound Blaster.

o listen to and learn more about the Sound Blaster AWE64 Gold contact us at:

ww.SoundBlaster.com/sound/AWE64Gold.

Copyright 1997 Creative Technology Ltd. Sound Blaster and the Creative logo are registered trademarks and AWE64 ld, Creative WaveSynth/WG and E-mu 3D Positional Audio are trademarks of Creative Technology Ltd. All other names property of their respective owners. All specifications are subject to change without prior notice. All rights reserved.

CREATIVE®
WWW.SOUNDBLASTER.COM

Circle 54 on reader service card

PC TECHNOLOGIES: COMING ATTRACTIONS

TECHNOLOGY	What it does	When it's due	Chances of success
Device Bay	Externally accessible bay that accepts interchangeable peripherals. Planned for both desktop and portable PCs.	Peripherals due late 1998 or early 1999. No software support in first version of Windows 98.	Poor
FireWire	IEEE 1394 High-Performance Serial Bus. Transfers data at up to 400 mbps. Claims to allow easy device interconnection on one cable.	Add-in cards available. Only peripherals are Sony digital camcorders. Scanners available mid-1998; other devices in late 1998 or early 1999.	Good
JetSend	Lets intelligent peripherals communicate with each other without sending through the PC.	No peripherals available yet; timetable unknown.	Too early to tell
Self-monitoring PCs and peripherals	Different technologies monitor voltages, temperatures, and peripherals. Take action or alert user if problems found.	In high-end workstations now; in most PCs by end of 1998.	Excellent

The new Device Bay spec from Compaq, Intel, and Microsoft illustrates the roadblocks to new hardware standards. This specification is designed to let you easily add peripherals like hard drives and CD-ROM drives to external bays in desktop and portable PCs. Device Bay was introduced with great fanfare earlier this year, however its chances look iffy. At press time, PC makers were reportedly balking at the idea of letting competitors' peripherals easily fit into their PCs.

Future systems might also include a JetSend port. This new technology from Hewlett-Packard lets specially designed peripherals communicate directly with one another without special drivers or complicated setups. For example, you might be able to connect a JetSend camera directly to a JetSend color printer, bypassing your PC. HP has released JetSend as an open standard and Microsoft has endorsed it, but so far the only other peripheral maker to endorse it is Canon, and the company hasn't announced a product or ship date. It's too early to say whether JetSend will make it or not.

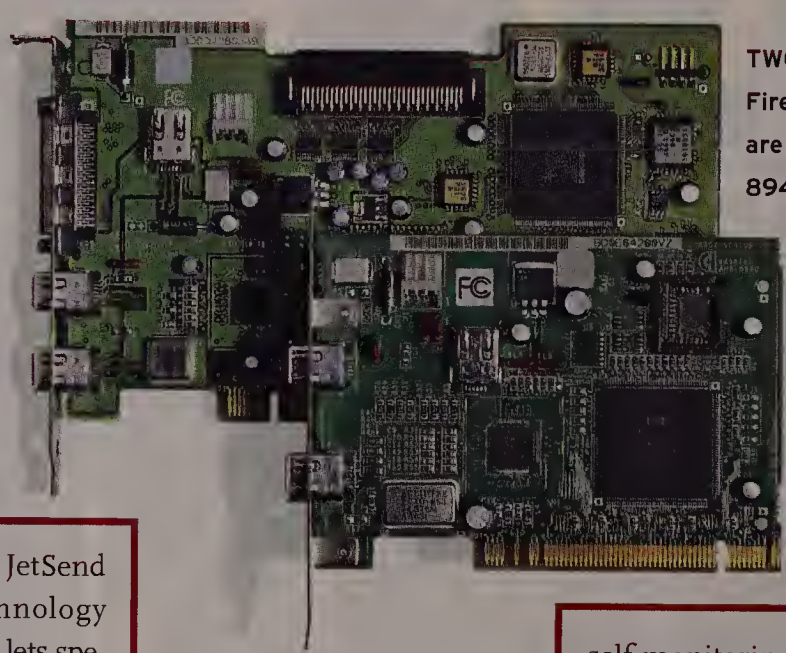
PC AS COST CUTTER

COMPUTERS WILL SOON monitor themselves continuously and report potential problems before they result in system crashes. Self-monitoring diagnostics are appearing first in high-end systems, such as the new Hewlett-Packard XU series. Components such as temperature sensors can change fan speeds or even shut down the PC if it overheats. This feature becomes critical as vendors pack more and faster components into tinier spaces. CPUs and hard disks can generate a lot of heat, which can destroy electronic devices and data.

These self-monitoring capabilities may extend to PC security as well. HP and IBM are developing computers that detect when their cases are opened, and if any components are changed or removed, will notify you or your IS department. Expect to see self-monitoring technologies in standard desktop systems by the end of 1998.

Hard drives, too, are developing their own "smarts." Many high-end hard drives incorporate S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) software that can tell when a drive is having problems and then take action, such as backing up data to a tape drive. In fact, you may already have a S.M.A.R.T. drive in your PC and not know it. S.M.A.R.T. requires software that notifies you when it detects a problem. Currently, that's found mainly in network monitoring software such as Intel's LANDesk or HP TopTools. These capabilities should be widely available by the end of 1998.

FIREWIRE CARDS



TWO OF THE first FireWire add-in cards are Adaptec's AHA-8945, which blends FireWire with an Ultra SCSI interface for fast hard disks, and the AHA-8940 (front), which adds FireWire only.

HOLD TIGHT

NO MATTER what the claims, a technology's odds of becoming part of your next system depend on whether Microsoft supports it under Windows. But just because Microsoft endorses it doesn't guarantee success. In recent years, the company has pushed a variety of now defunct hardware specifications. In 1996, Microsoft announced the Simply Interactive PC, which became PC-97. Now PC-98 is under development, a spec that includes Device Bay and self-monitoring features.

If you're in the market for a new PC or peripheral, the next year or so will be confusing as new technologies compete for your hard-earned dollars. But don't rush: Many, such as USB, still need to have the kinks worked out. But rest assured that PCs that are easier to set up and that are more reliable are on the way.

—*Stan Miastkowski* ▶

PHOTOGRAPH: JOHN GREENLEIGH

Upgrade your PC to Cinema-Quality Video & Crystal-Clear Sound. Introducing PC-DVD™ Encore™.

Tomorrow's Technology at a Knock-Out Price Today!

Energize your senses with the unparalleled multimedia experience of PC-DVD Encore featuring Creative's exclusive DynamicXtended Resolution™ (Dxr2™) technology. Now, watch the hottest films and experience the enhanced definition, multi-channel Dolby Digital audio and full-motion MPEG-2 video that PC-DVD Encore delivers. Get superior output on your PC, or connect to your TV. Creative's proprietary software interface provides a complete range of viewing features, while the drive is fully backwards compatible, reading all CD formats. For more information, check out our Website at **www.soundblaster.com.**

Creative's PC-DVD Encore—The Complete Solution:

Revolutionary Dxr2 Decoder Card with DynamicXtended Resolution

- Connects to your TV with composite or S-video outputs
- Interfaces with your Dolby® Digital receiver for multi-channel, theater-like audio
- Sharpens MPEG-2 images to deliver enhanced definition, full motion video

High Performance Creative PC-DVD Drive

- Second generation, high-speed PC-DVD drive accesses DVD data twice as fast
- Reads all standard CD-ROM data at 20x, including CD-R and Photo CD®
- Reads large capacity DVD-ROM's—up to 17GB and 25 times more data than a standard CD

Cutting-Edge DVD Titles and Proprietary Software Interface

- Includes DVD megahits, exclusively for PC-DVD Encore
- Software interface allows fast forward/reverse, slow motion, stop action and crystal-clear single frame viewing

The Hottest Upgrades Create The Coolest PC.

CREATIVE®

WWW.SOUNDBLASTER.COM

* Estimated Street Price

Creative Labs Inc. and the Creative logo are registered trademarks and PC-DVD, Dxr2 and DynamicXtended Resolution are trademarks of Creative Technology Ltd. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories. All other brand and product names are trademarks or registered trademarks of their respective holders. ©1997 Creative Technology Inc. All rights reserved. Printed in the USA.

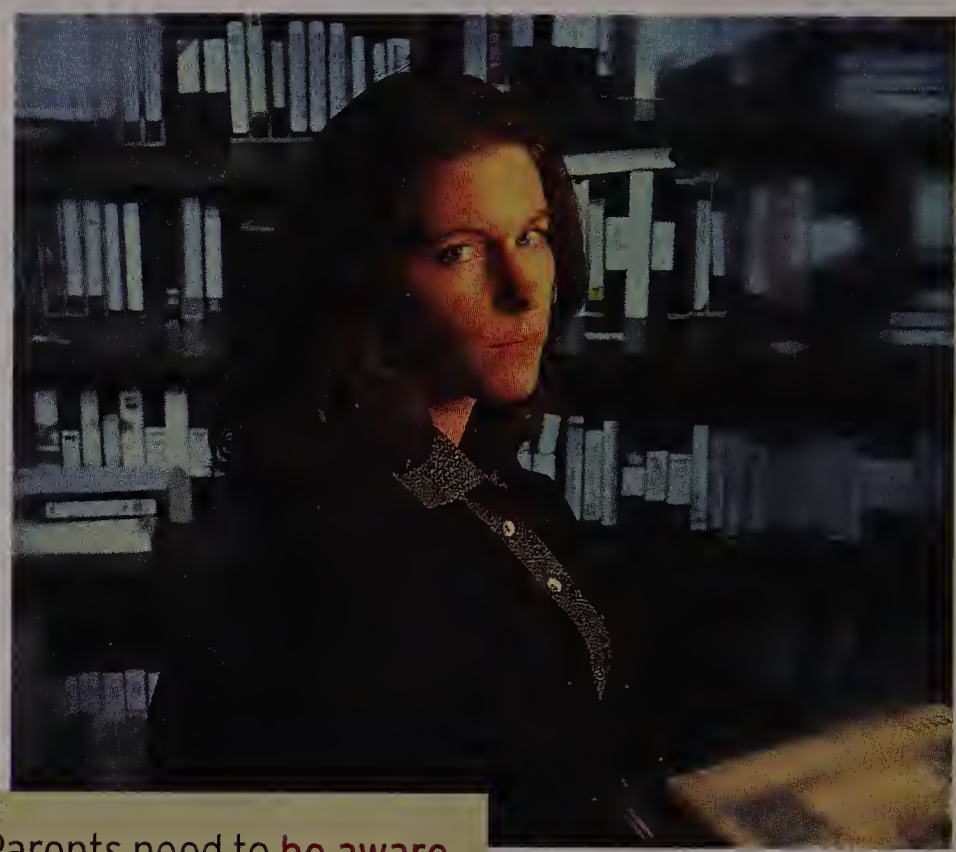
Circle 59 on reader service card

Internet Filters: The Smut Stops Here. Or Does It? Screening Five Top Web Filters

ANALYSIS

WHEN THE Supreme Court overturned the obscenity provisions of the Communications Decency Act this summer, free-speech advocates and conservative organizations finally found something they could agree on: It's up to parents to keep children away from inappropriate material on the Net.

A big responsibility? Of course. But that's why they pay parents the big bucks. For a while it looked as if a new generation of software monitors and filters—designed to screen out sexually explicit material without trampling on anyone's right to free speech—would make the job a lot easier. No such luck. Despite a world of good intentions, most of these products on the market today leave a lot to be desired.



"Parents need to be aware that the programs employ a value system."

THE CENTER for Media Education's Shelley Pasnik cautions parents not to let screening software make all the decisions for them.

A MOVING TARGET

INTERNET-BLOCKING software is neither as easy to use nor as foolproof as parents and developers would like. It sometimes lets through shockingly explicit material while screening out safe and useful content. And it can be awfully inflexible. To prevent tampering by computer-savvy kids, most of the programs do not provide users with access to their lists of blocked sites. As a result, parents must blindly accept the developer's philosophy about what is—and isn't—appropriate for children.

Among the five programs we tested, two (Cybersitter and SurfWatch 1.6) effectively filtered out all ten of our bellwether adult-oriented pages. Although easily identifiable sites such as *Playboy* magazine's home page were blocked by every product we tested, some explicit sites—with names like Hardcore Galaxy, New York Dolls, and Horney [*sic*] Women—made it through several of the filters.

At first glance, that may seem surprising. After all, the programs filter out objectionable material using a combination of keyword lists and an extensive database of sites reviewed by the software developer. Why don't they work better?

To begin with, the programs are shooting at moving targets. With new sites being added daily—and existing sites moving from one Internet service provider to another—it's a battle to keep Web address lists up to date, says Susan Getgood, director of marketing for Microsystems Software's CyberPatrol, the official filtering program for America Online. The more frequent the updates, the better the coverage; SurfWatch, CyberPatrol, and Cybersitter all update their lists daily. Programs that let parents customize their own list of objectionable sites provide yet another level of protection.

As for the keyword lists, the problem is more complex. Some of the filters search on the Web address, but not on the page itself. So if the telltale words don't appear in the address, the offensive material will slip through.

MY MORALS OR YOURS?

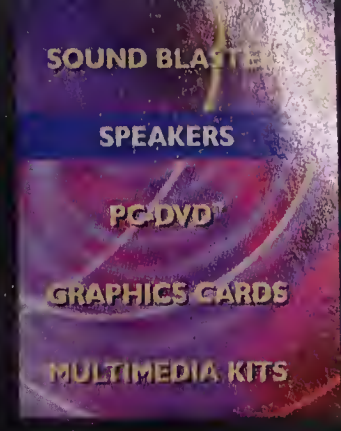
OF THE PROGRAMS we tested, SurfWatch is by far the simplest to install and use. The software is so unobtrusive that the only way you know it's working is by the icon on the Windows toolbar and the "Blocked by SurfWatch" notice that pops up when you try to access an objectionable site.

But its simplicity also means fewer options for parents. SurfWatch 1.6 doesn't let users create their own lists of objectionable sites (though this capability will be available in version 3.0). The program also doesn't allow different access privileges for different family members. The only way to override its restrictions is to turn the filter off entirely. And in its efforts to screen offensive content, SurfWatch also filtered out potentially valuable educational material that some parents may want their teens to see, such as the safe-sex advice offered by Planned Parenthood on its Web page, and an educational site for teens called SaferSex.

Of course, to some parents a safe-sex site may be the sort of thing they want to keep their kids away from. "Parents need to be aware that the [screening] programs employ a value system," says Shelley Pasnik, director of children's policy at the Center for Media Edu- ▶

PHOTOGRAPH: KATHERINE LAMBERT

Upgrade to Chest-Thumping, Soul-Satisfying Sound.



MicroWorks™ by Henry Kloss

"The Cambridge SoundWorks Lineup Performs Far Beyond It's Price And Size Class."
— *Stereo Review*

Turn Your PC's Speakers Whine into a Roar!
Don't suffer through the tinny sound of your PC's speakers! Cambridge SoundWorks®, designers of highly acclaimed home theater speakers, introduces the ultimate in high performance, value priced speaker systems for your PC. These amplified subwoofer/satellite speakers allow you to hear everything—from the lyric melody of a violin to the high-powered roar of a jet at mach 5. Creative Labs and Cambridge SoundWorks—bringing home stereo audio to your PC at prices that can't be beat! For more information, check out our Website at **www.soundblaster.com.** or call 1.800.998.5227.

Introductory Price $99.99 ESP*

PC Works™
Enjoy the best home stereo audio value for your PC

"Overall Sound Quality is Very Clean, With Well-Defined Highs, Clear Mids, and Solid Bass."
-Computer Gaming World

SoundWorks®
Experience low bass, accurate stereoimaging and superior tonal balance on your PC

"May Just Outclass Your Home Hi-Fi."
- PC Gamer

MicroWorks™
Feel the ultimate in window-rattling, earth-shaking bass on your PC

"I Assumed That They Were Powered By Testosterone Rather Than Electricity."
-PC World

The Hottest Upgrades Create The Coolest PC.

CREATIVE
WWW.SOUNDBLASTER.COM

*Estimated Street Price.

The Creative logo and Sound Blaster are registered trademarks and PC-DVD and The Great 64 Gold Giveaway are trademarks of Creative Technology Ltd. in the United States and/or other countries. Cambridge SoundWorks and SoundWorks are registered trademarks and PCWorks and MicroWorks by Henry Kloss are trademarks of Cambridge SoundWorks, Inc. in the United States and/or other countries. ©1997 Creative Technology Inc. All rights reserved. Printed in the USA

Circle 69 on reader service card

RATING THE FILTERS

PRODUCTS	Price	Supports rating system	User-customizable lists	Defines multiple users	Effectiveness	Reader service number
Microsystems Software's CyberPatrol 800/928-2600 www.cyberpatrol.com	$29.95 street; includes three months of updates	●	●	●	Blocked six of ten adult sites	755
Solid Oak Software's Cybersitter 800/388-2761 www.solidoak.com	$39.95street; free updates	●	●	○	Blocked all adult sites	756
Net Nanny Software's Net Nanny 3.1 604/662-8522 www.netnanny.com	$39.95 list, $26.95 direct; free updates	○	●	○	Blocked six of ten adult sites	757
Net Shepherd's Net Shepherd 2.0 403/218-8912 www.netshepherd.com	Free software; updates $12 per year	○	○	●	Blocked seven of ten adult sites	758
SurfWatch Software's SurfWatch 1.6 800/458-6600 www.surfwatch.com	$49.95 street; free updates for first year	○[1]	○[1]	○	Blocked all adult sites	759

● Yes ○ No

[1] Will be added in an upcoming release.

cation in Washington, D.C. Although most parents would clearly find some sites objectionable, there's also a tremendous gray area, Pasnik says—sites that may be acceptable to some parents, but not others. "We have to be careful," she adds, "not to let the technology make our decisions for us."

User customization may be one solution. CyberPatrol, for example, is one of the most customizable programs we tested. It lets you set multiple user levels (such as for kids of different ages), supports two industry rating standards, and has multiple control levels for a variety of areas—from violence and profanity to nudity and drug-related content.

Within each category a parent can select from among several access levels. It's possible, for example, to authorize access to sites containing partial nudity or those with artistic value, while screening out sites that depict sexual acts.

But more isn't always better. It takes time to experiment with CyberPatrol's tools before settling on a combination that provides the right access for every family member (the vendor says that usability is improved in the next version). And despite its arsenal, CyberPatrol allowed access to three of the ten adult sites in our tests. We could block access to all unrated sites, but we were locked out of the Museum of Modern Art's site, plus the Web pages for the *New York Times* and *National Geographic*, because they don't support the rating system.

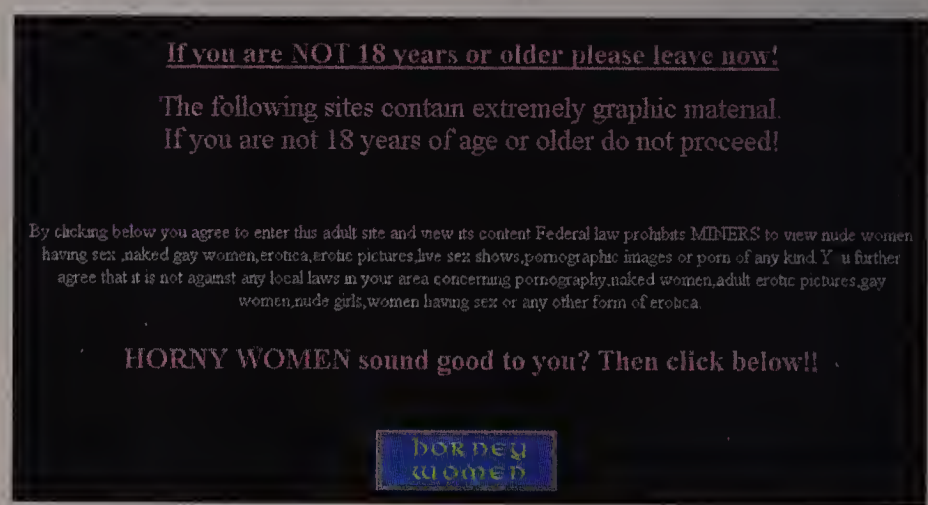
We also saw two products that don't screen sites at all. Cyber Snoop and Internet WatchDog provide adults with tools to track their kid's Web travels and then to develop their own lists of sites. "We've never believed we should be blocking sites," explains Joe Field, vice president of Pearl Software, developer of Cyber Snoop. "We think adults need to be helping teach children right from wrong by discussing with them the types of sites they should and should not have access to."

Nevertheless, Field notes that some parents want more control. So the next version of Cyber Snoop (due in September) is slated to include keyword blocking. The company has also begun e-mailing a list of objectionable sites to customers who request it. But Field strongly recommends that parents develop their own lists of forbidden Web sites.

Recognizing the complexity of the issue, many national parenting and children's advocacy groups have issued guidelines for parents and teachers struggling to figure out the Web—and kids' access to it. One such guide is available for $8 from the National Parent-Teacher Association (www.pta.org/programs/guide.htm) and Children Now (www childrennow.org). Each group encourages parents and teachers to experiment with filtering software, and they both emphasize the importance of keeping an open line of communication between parent or teacher and child.

All the companies we contacted offer trial versions of their software, available for downloading from their Web pages. Should you buy one of the products? Not if you expect it to replace adult supervision. And not if you're too busy to put in some long hours tweaking it. But some sort of screening software, however imperfect, is probably better than an otherwise unchaperoned trip to cyberspace.

—*Roberta Furger*



SOME PRETTY RAUNCHY stuff can slip through the filtering process—including this page.

- Cyber Snoop $29.95; Pearl Software; 800/732-7596; www.pearlsw.com

READER SERVICE NO. 785

- Internet WatchDog $29.95; Charles River Media; 800/382-8505; www.algorithm.com

READER SERVICE NO. 786 ■

We're Bustin' Loose...
GATEWAY2000
"You've got a friend in the business."®

...And Ridin' Herd Over the Competition!

When it comes to delivering more for less, stopping the folks at Gateway 2000 is about like heading off a stampede with a motor scooter.

So when component prices started to dive, we cut prices lower than a rattler's belly in a wagon rut. But we reckon that's just the beginning. Gateway field hands also amble around the world, looking for great value and working with component manufacturers to corral fresh technology. On top of that, we've created five broad product lines to meet our customer's diverse needs.

We mean business with our **E-Series** desktops and servers designed for corporate customers. **Gateway Solo™** portable PCs deliver mobile computing power, modularity and flexibility. The **Destination™ Big Screen PC/TV** rules group computing. The **GP-Series** handles small office/home office needs. And classic Gateway multimedia value is what the **G-Series** is all about.

Gateway offers a complete line of systems featuring Intel Pentium® Processors.

Quality And Service Wear Our Brand

If you see the Gateway mark branded into the hide of anything, you know it's been tested more times than a bull rider in August and backed by customer service pros who know the business end of a chip set.

To help keep you in the computing saddle, we back all our systems with limited warranties. Call or write for free copies. And once you join the Gateway customer family, you'll have a technical support friend just a toll-free phone call away, 24 hours a day.

Highest Brand Loyalty, Bar None

No wonder an IDC/ACNielsen survey of computer owners showed Gateway had the highest brand loyalty of any computer maker in the U.S. home market, even better than those guys with the fruit logo.*

Give Gateway a holler today and get in on the stampede of value. We'll be glad to cut one from the herd and deliver it to your door.

Based on percentage of computer owners planning to buy another computer of the same brand as they currently own between 11/1/96 and 7/31/97.

New In These Parts?

Not only does Gateway ride herd on the PC stampede for our customers, we're always looking for new things worthy of the Gateway brand that can drive your PC productivity and enjoyment to a whole new level.

Because we talk to about 30,000 customers a day, Gateway has a unique perspective on what folks want in their computers. We also ask Gateway employees who market, build, sell and service our PCs what they think will benefit customers most.

With all that information, we hunker down with customer survey research and huddle with our vendor allies to anticipate when new technology will come onto the market.

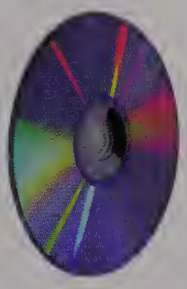
It's all about looking six months or more down the road and lining things up to make it easy for our customers to get the latest technology. Take a gander at the new features we're offering and give us a call.

GATEWAY™ Servers

No matter how big your business is, Gateway servers can ride herd on your data. Fault-tolerant features such as N+1 redundant power supplies, multi-drive RAID support and error-correcting memory help safeguard your data. Choices include **Pentium® II** processors, up to six Pentium® Pro processors and a maximum of 4GB of RAM.

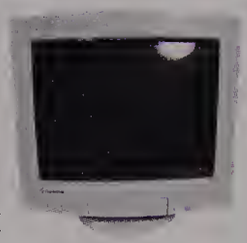
Our servers also feature the InforManager™ manageability subsystem, a series of 30 integrated sensors that monitor temperature, voltage, fan, power supplies and software to let you know if anything needs attention.

DVD (Digital Versatile Disc)



The new multimedia sheriff goes by the initials DVD, and is fixin' to create a whole new standard throughout the computer territories. One Digital Versatile Disc holds 4.7GB of data, a sprawling data prairie that's seven times the capacity of a CD, room enough for up to 133 minutes of video that makes your VCR tapes seem as fuzzy as the Badlands in a dust storm.

EV900 Monitor



A while back, we saddled up some jet airplanes and searched the world for a better monitor. First we found a great monitor tube. Custom designed a case around it. The resulting EV900 is a 19-inch monitor (18-inch viewable) that takes up about the same space on your desktop as our 17-inch monitor (15.9-inch viewable) without skimping on quality.

Boston Acoustics® Speakers

What good is great multimedia if your computer has speakers as tired as a draft horse on Saturday? We sat a spell with the folks at Boston Acoustics and found a way to bring their award-winning sound to our PCs. Gateway yokes these great speakers to some mighty fine sound cards to break new PC audio ground.

Gateway Solo™ Portable Modularity

Our portable components are modular, so many of them can be swapped between different Gateway Solo portables. Now you can mix and match one set of batteries, AC power packs and memory chips between several 2300 and 9100 portables. More flexible than a well-oiled lasso and twice as sleek.

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000

"You've got a friend in the business."®

800-846-2065

www.gateway.com

Prairie Value, City Savvy

When you grow from nothing to $5 billion in 11 years, you tend to know what it takes to run a business. Experience from our own amazing growth and suggestions from our customers, sales groups and manufacturing teams led to our GATEWAY™ E-Series PCs and servers. After we designed the systems, we put them through extreme network environment tests. Geared just for business, education and government customers, the E-Series line kicks up its heels with:

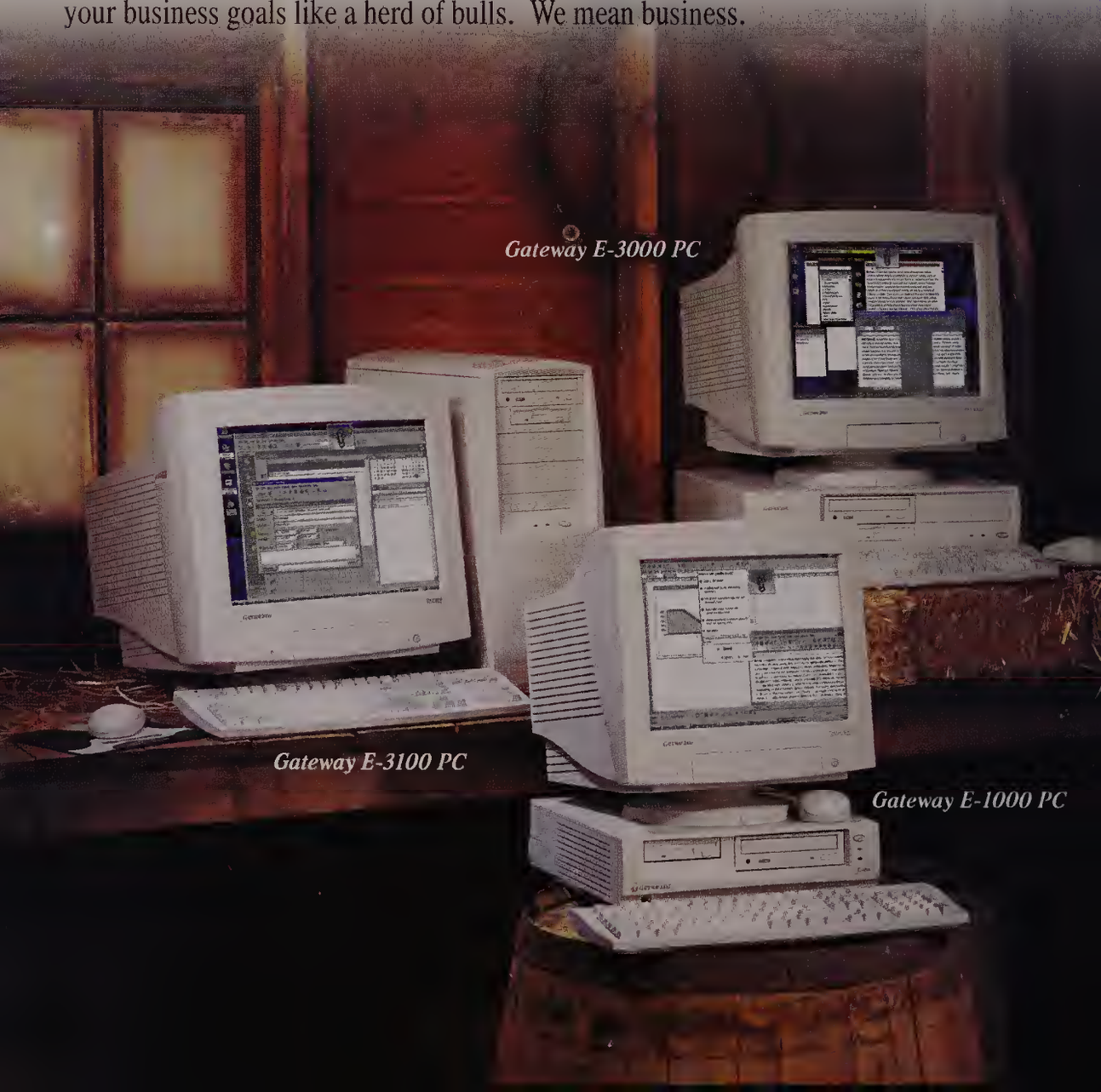
Manageability — DMI-compliant PCs let your IS team know what's going on without popping the case. The InforManager subsystem in our servers monitors key functions and alerts you of potential failures.

Product Stability — Nothing more annoying than having skitterish PC vendors constantly changing their base platforms. Gateway's solid desktop and server platforms let you standardize on configurations that fit your enterprise. You can manage technology upgrades as they make sense for your particular outfit.

Serviceability — Easy-open cases let you get into our systems in a flash. And our team of highly trained, dedicated technical support pros are ready around the clock just in case you need the digital cavalry.

Flexibility — No matter what size systems you need, you make the decisions on what goes into your E-Series desktop PCs and servers. Your sales rep will listen to your needs and find a configuration that gets it done.

Call your Gateway 2000 Major Accounts sales rep today and we'll charge toward your business goals like a herd of bulls. We mean business.



Gateway Servers

- Intel Pentium® Pro or **Pentium® II** Processors
- A Full Range of Solutions with up to 6-way Processor Support
- Pre-installed High-Bandwidth Network Options
- InforManager™ Subsystem for Server Management
- Variety of High Performance Storage Solutions Including Hot-Swappable Internal RAID

Prices starting at
$2499 *(Quantity 1)*

Gateway E-Series PCs

- Intel Pentium,® Pentium Pro or **Pentium II** Processors
- High-Performance SCSI, EIDE or Ultra ATA Hard Drives
- 2-D or 2-D/3-D Video Adapters
- Pre-installed High-Bandwidth Network Options
- E-Series Low Profile, Desktop or Mid-Tower Case
- Pre-loaded with Microsoft® Windows® 95 or Windows NT® Workstation 4.0
- Hardware Management Features
- Desktop Management Interface (DMI) 1.1 Compliant
- Gateway Gold™ Service and Support for E-Series PCs◆◆

Prices starting at **$979** *(Quantity 1)*

◆◆E-Series PCs are covered by a three-year limited warranty. Service varies by product. Call or write for details and a free copy of our limited warranty.

Custom Integration Services

Say your corporation or institution uses a specific inventory control program or certain type of backup storage device.

For volume purchasers, Gateway's CIS crew can help you get some of that hardware or software built into your new systems, pre-tested and shipped to your door. It doesn't matter if we normally sell it or not.

That means you don't have to pay any other outfit to add hardware and software to your Gateway systems. They come right to your corral ready to go to work.

Gateway Extras

(Available only with system purchase.)

- PCI Token Ring Adapter **$149**
  3Com® PCI 10/100 TP Adapter **$49**
  (both upgrades from ISA TPO 10BASE-T Adapter)
- MS® Windows NT Workstation 4.0 Upgrade **$99**
- 3.2GB Ultra ATA Hard Drive
  6.4GB Ultra ATA Hard Drive
  (Call for upgrade pricing.)
- Printers *(Call for information and pricing.)*
- Customized Service Options
  (Call for information and pricing.)

Please call for current pricing on RAM and other upgrades.

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000

"You've got a friend in the business."®

800-846-2065

www.gateway.com

Gateway E-Series PCs For Business

Computing That's At Home On The Range

Gateway Solo portable PCs are thundering through the mobile computing world, leaving a flutter of blue ribbons and trophies in their wake.

When Gateway's mobile PC crew designed our flagship Gateway Solo 9100 portable they had one priority: features. The result is a portable loaded for bear with features normally found only in desktop PCs. If you're looking for a more classic mobile PC, the 2300 line delivers plenty of power and performance. It's ideal for the corporate fleet.

No matter which portable fits your needs, with Gateway you get:

Modularity — Besides being loaded, Gateway Solo 9100 portables can swap many components with their counterparts in the 2300 series. Now IS can buy one supply of components interchangeable with the entire fleet of 2300 and 9100s. Modularity also helps protect your investment with easily changeable components.

On top of that, all our Gateway Solo portables work with all our docking stations.

Choices — Not only does Gateway have multiple lines of mobile PCs, but you'll never get some pre-built portable that's been sitting on a shelf. Gateway customers decide what goes into their mobile PCs and then we build them fresh and ship them out.

Fresh technology — No hand-me-downs from the desktops here. Gateway gets the freshest mobile PC components on the market and only builds your Gateway Solo portable PC after you order it.

Slip a Gateway Solo portable PC into your saddle bag and you're ready for the road, no matter where you're going.

**Maximum data transfer rate dependent on certain variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols*

Gateway Solo 9100XL Portable PC

Gateway Solo 2300LS Portable PC

Gateway Solo™ Portable PCs

2300SE

- 12.1" SVGA DSTN Color Display
- Intel® 133MHz Pentium® Processor
- 16MB EDO DRAM (expandable to 192MB)
- 256K Pipelined Burst Cache
- 128-Bit Graphics Accelerator w/ 64K Colors
- Modular 6X min/11X max CD-ROM Drive
- Modular 3.5" Diskette Drive
- USB Ports & Zoomed Video
- NTSC/PAL Video Output
- 2GB Hard Drive
- 16-Bit Sound & Stereo Speakers
- NiMH Battery & AC Pack
- 85-Key MS® Windows® 95 Keyboard
- EZ Pad® Pointing Device
- Casual Carrying Case
- Microsoft® Windows 95
- MS Works 95
- Gateway Gold™ Service & Support for Portable PCs

$2149 As low as* $75/mo.

2300LS

- 12.1" SVGA TFT Color Display
- Intel 150MHz Pentium® Processor with MMX™ Technology
- 32MB SDRAM (expandable to 192MB)
- 256K Pipelined Burst Cache
- 128-Bit Graphics Accelerator w/ 64K Colors
- Modular 6X min/11X max CD-ROM Drive
- Modular 3.5" Diskette Drive
- USB Ports & Zoomed Video
- NTSC/PAL Video Output
- 3GB Hard Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- PCMCIA 33.6 Data**/14.4 Fax Modem
- 12-Cell Li-Ion Battery & AC Pack
- 85-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Casual Carrying Case
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta® 97
- Gateway Gold Service & Support for Portable PCs

$3849 As low as* $134/mo.

9100XL BEST BUY

- **13.3" (1024 x 768 resolution) XGA Color Display**
- Intel 233MHz Pentium Processor with MMX Technology via IMM® Package
- 64MB SDRAM (expandable to 192MB)
- 256K Pipelined Burst Cache
- **4MB EDO Video RAM (1280 x 1024 external)**
- **Removable Combo 6X min/11X max CD-ROM & 3.5" Diskette Drive (allows for second battery pack)**
- USB Ports & Zoomed Video
- NTSC/PAL Video Input & Output with frame capture capability
- 5GB Hard Drive
- Premium Sound System w/ 16-Bit Wavetable Sound & Yamaha Stereo Speakers
- PCMCIA Modem with x2 Technology**
- Two 12-Cell Lithium Ion Batteries & AC Pack
- Full 88-Key MS Windows 95 Keyboard with 19mm pitch & 3mm travel
- EZ Pad Pointing Device
- 15-Pin MIDI/Game Port
- Executive Carrying Case
- Gateway Solo Mini Docking Station
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service & Support for Portable PCs

9100XL $5899 As low as* $205/mo.

9100LS $4599 As low as* $160/mo.

(200MHz Pentium Processor with MMX Technology, 3GB Hard Drive, 32MB SDRAM, One Li-Ion Battery, Casual Case.)

Gateway Extras

(Some items only available to new or existing Gateway customers or with the purchase of a system.)

- Gateway Solo Docking Station **$599**

- Gateway Solo Mini Docking Station **$199**
- Additional 2300/9100 Lithium-Ion Battery **$200** *(with system purchase)*

- Printers *(Call for information and pricing.)*

Please call for current pricing on RAM and other upgrades.

MMX™ intel inside pentium® PROCESSOR

GATEWAY2000

"You've got a friend in the business."®

800-846-2065

www.gateway.com

Gateway Solo Portable PCs For The Road

Bigger Than All Outdoors

Hailing from South Dakota, wide open spaces have always attracted Gateway. So it's no wonder we invented a whole new computer category by introducing the Destination Big Screen PC/TV in April 1996.

Its huge 31-inch monitor, wireless keyboard and Field Mouse remote make the Destination Big Screen PC/TV a system born and bred for group use. And, with a click of the mouse button, the Destination system becomes a fully functional television. The Destination Big Screen PC/TV includes options like the power of a **Pentium® II** processor and the amazing digital video of DVD. Custom configure one to fit your needs and yank computing out of the den and into the:

Family room — Computing and exploring the Internet just became group activities. After a year on the market, 61% of Destination system owners we surveyed said they spent more time with their families as a result of the Destination Big Screen PC/TV.

Conference room — Now you can combine the presentation power of a big screen computer with the functions of a video system. Add your video cassette player, cable TV hookup and phone line and you've got one system that does it all, at a price that will let you outfit all your conference rooms.

Classroom — How do you teach computer-based lessons to a class? The screen size of a traditional desktop made it tedious at best. Now educators can wheel the Destination Big Screen PC/TV to the head of the class and give all students a great view. And Gateway value delivers a lot without consuming the ever-shrinking budget.

Gateway Destination D5-166 Big Screen PC/TV with Boston Acoustics MicroMedia Speakers

GATEWAY™ Destination™ Big Screen PC/TVs

D5-166

- Intel® 166MHz Pentium® Processor with MMX™ Technology
- 32MB SDRAM
- 512K Pipelined Burst Cache
- Destination 31" VGA Monitor
- 2MB Graphics Accelerator w/ Cable-Ready TV Tuner
- 2GB 11ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq® Wavetable Audio
- **Boston Acoustics® MicroMedia™ Speakers**
- TelePath® Modem *for Windows* with x2™ Technology**
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad® Pointing Device
- Wireless Field Mouse® Remote
- Microsoft® Windows® 95
- Home Software Titles
- Gateway Gold™ Service & Support◆ for Big Screen PC/TVs

D5-166 $2499 As low as× $87/mo.

D5-200 $2999 As low as× $104/mo.

(200MHz Pentium Processor with MMX Technology, 4GB Hard Drive, DVD-ROM Drive and DVD Decoder)

D6-233

- Intel 233MHz **Pentium® II** Processor with 512K Cache
- 64MB EDO DRAM
- Destination 31" VGA Monitor
- 2MB Graphics Accelerator with Cable-Ready TV Tuner
- 4GB 11ms Ultra ATA Hard Drive
- **DVD-ROM Drive & DVD Decoder Card**
- 3.5" Diskette Drive
- Ensoniq Wavetable Audio
- **harman/kardon® High-Fidelity Sound System**
- TelePath Modem *for Windows* with x2 Technology**
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad Pointing Device
- Wireless Field Mouse Remote
- MS® Windows 95
- Home Software Titles
- Gateway Gold Service & Support◆ for Big Screen PC/TVs

$3999 As low as× $139/mo.

◆*The Destination 31-inch monitor is covered by a one-year limited warranty. Call or write for a free copy.*

D6-300XL

- Intel 300MHz **Pentium II** Processor with 512K Cache
- 64MB EDO DRAM
- Destination 31" VGA Monitor
- 2MB Graphics Accelerator with Cable-Ready TV Tuner
- PowerVR 3-D Graphics Accelerator
- 8GB 8.5ms Ultra ATA Hard Drive
- **DVD-ROM Drive & DVD Decoder Card**
- 3.5" Diskette Drive
- Ensoniq Wavetable Audio
- **harman/kardon High-Fidelity Sound System**
- TelePath Modem *for Windows* with x2 Technology**
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad Pointing Device
- Wireless Field Mouse Remote
- MS Windows 95
- Home Software Titles
- Gateway Gold Service & Support◆ for Big Screen PC/TVs

$4599 As low as× $160/mo.

Gateway Extras

(Some items only available to new or existing Gateway customers or with the purchase of a system.)

- Logitech™ WingMan® Extreme™ Joystick **$39**
- Additional Destination 31-inch VGA Color Monitor **$999**
- EasyPhoto Drive™ Photo Scanner **$129** *(with system purchase)*

- Epson® PhotoPC™ 500 Digital Camera **$499**
- Epson Stylus® COLOR 600 Ink Jet Printer **$299**

Please call for current pricing on RAM and other upgrades.

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000

"You've got a friend in the business."®

800-846-2065

www.gateway.com

Destination Big Screen PC/TVs For Group Computing

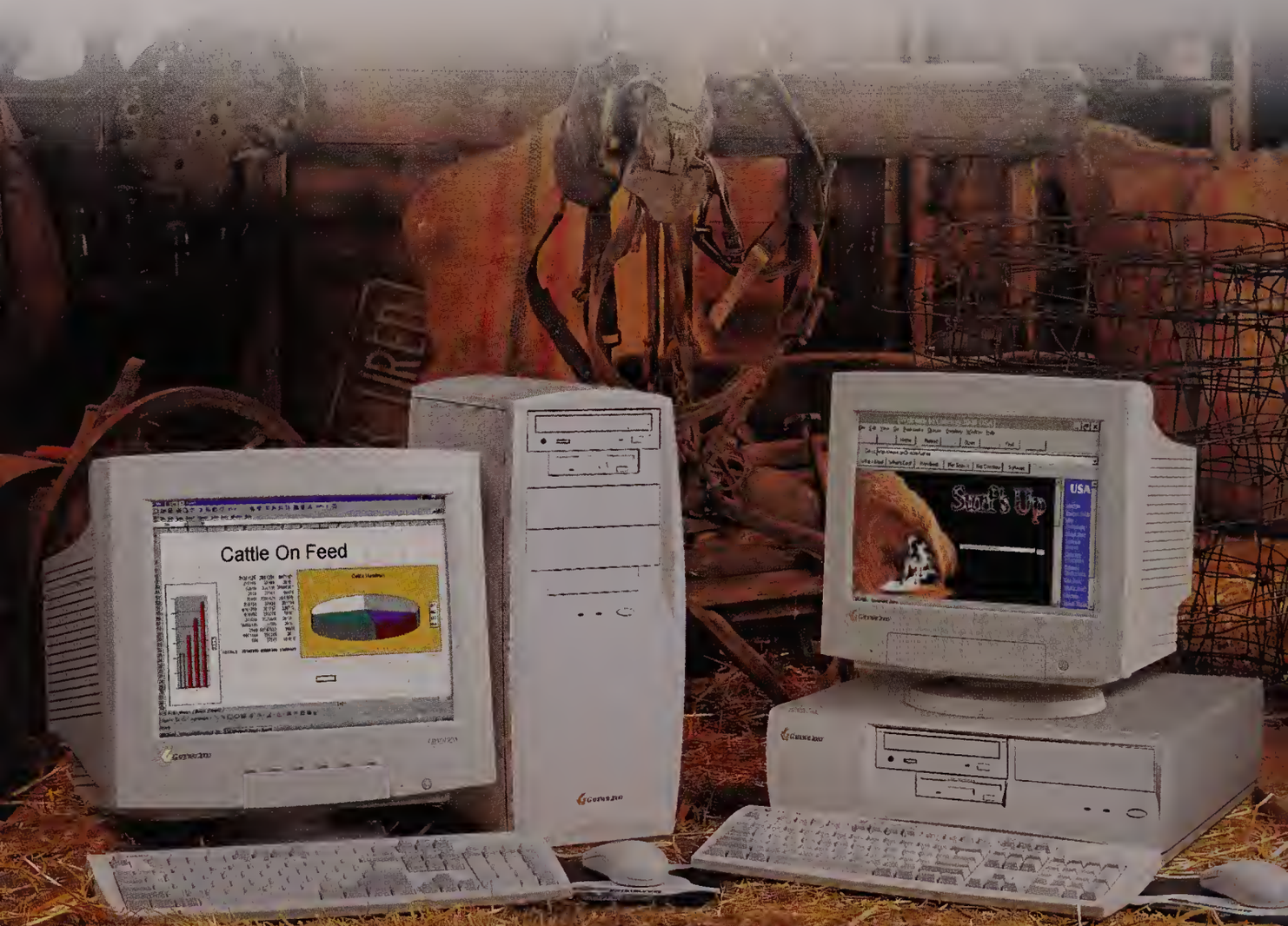
Big Systems For Small Operations

The GATEWAY™ GP-Series professional PCs aim to deliver one system that can do many things for small- and medium-sized business. Head-of-the-pack technology lets our GP-Series PCs take care of everything from inventory to accounting. We deliver MMX™ technology across the line and options that include the **Pentium® II** processor, huge backup storage devices and software that can boost business productivity. The GP-Series systems tackle your business needs like a steer wrestler in the championship go-round.

You Call The Shots — Because you know more about your business needs than anyone, you decide what goes into your GP-Series system. Our sales representatives can help you assess your needs and explain your options. But you make the final call.

Fresh Technology — Intel Pentium processors with MMX technology can take care of your business needs, thanks to our philosophy of combining them in fresh configurations. Things like 512K cache, plenty of RAM and Ultra ATA hard drives up to 6.4GB make Pentium processors perfect for your small office/home office needs.

Software That's Part Of The Deal — Gateway knows hardware is just part of the bargain. You also need software, and we've got it in standard and optional packages. So while some companies charge you extra for the basics like anti-virus software and productivity programs, Gateway throws them in with the system, no extra charge.



Gateway GP-Series Professional systems offered in your choice of tower or desktop model.

Gateway GP-Series PCs for the Office Professional

GP5-166

- Intel® 166MHz Pentium® Processor with MMX™ Technology
- 32MB DRAM
- 512K Pipelined Burst Cache
- EV500 .28 Screen Pitch 15" Monitor (13.9" viewable)
- 2MB 3-D 64-Bit PCI Graphics
- 2GB 11ms Ultra ATA Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- GP-Series Desktop Case
- 104+ Keyboard & MS® IntelliMouse™
- Microsoft® Windows® 95 & MS Office 97, Small Business Edition plus Encarta® 97
- Gateway Gold™ Service & Support for GP-Series PCs

$1449 Business Lease† $54/mo.

GP5-200

- Intel 200MHz Pentium Processor with MMX Technology
- 32MB DRAM
- 512K Pipelined Burst Cache
- CrystalScan®700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 2MB 3-D 64-Bit PCI Graphics
- 2GB 11ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- GP-Series Desktop Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service & Support for GP-Series PCs

$1749 Business Lease† $64/mo.

GP6-233

- Intel 233MHz **Pentium® II** Processor with 512K Cache
- 64MB DRAM
- CrystalScan700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 4MB 3-D 64-Bit Graphics
- 4GB 11ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- GP-Series Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service & Support for GP-Series PCs

$2399 Business Lease† $88/mo.

GP6-266 BEST BUY

- Intel 266MHz **Pentium II** Processor with 512K Cache
- 64MB DRAM
- ▸ **EV900 .26 Screen Pitch 19" Monitor** (18" viewable)
- 4MB 3-D 64-Bit Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- GP-Series Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service & Support for GP-Series PCs

$2899 Business Lease† $107/mo.

Gateway Extras

(Some items only available to new or existing Gateway customers or with the purchase of a system.)

- Hewlett®-Packard DeskJet 820Cse Color Printer **$299**
- TR4 IDE 4GB Tape Backup Unit with Tape **$199** *(with system purchase)*
- TelePath® Modem *for Windows* with x2™ Technology** **$79**
- Iomega® Internal ZIP™ Drive with Two Discs **$99** *(with system purchase)*

Please call for current pricing on RAM and other upgrades.

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000

"You've got a friend in the business."®

800-846-2065

www.gateway.com

GP-Series PCs For The Office Professional

High-Tech Multimedia, Down-Home Values

No sense in making things complicated. Give customers fresh technology at amazing prices. That's the long and the short of GATEWAY™ G-Series multimedia PCs. These systems deliver the latest multimedia wonders, including MMX technology priced for everyone and the unbeatable value of the amazing **Pentium® II** processor.

Freshness That Puts The Competition On Edge

By refusing to build even one system before someone orders it and keeping our component inventory among the freshest in the industry, we've spooked our competitors for years.

Gateway constantly searches for the greatest deals on the latest technology, like the **300MHz Pentium II** processor. Then we pack our systems with value and have technical support standing by to help 24 hours a day.

Pentium II Processor Power, MMX Technology, DVD Magic

When the **Pentium II** processor was coming out, we took a look-see and discovered this processor was a great deal for *everyone*. So we worked with Intel to secure a processor pipeline so we could deliver for our customers. We moseyed around the globe and found a way to lasso DVD-ROM drives. Same deal on the breakthrough EV900 monitor and the pristine sound of Boston Acoustics speakers.

Large Needs? Small Budget? We've Got You Covered

Looking for something to ease yourself into the computing world or to use as a second system? No problem. Check out the G5-166 multimedia PC complete with printer for $1,499. No matter what your needs or budget, we've got a system that fits.

We're always out there, looking for the great deals and the next technology that will benefit our customers. It's all part of leading the multimedia computing stampede.

Gateway G6-233 Multimedia PC with Boston Acoustics Speakers

Gateway G-Series Multimedia PCs for the Home

G5-166

- Intel® 166MHz Pentium® Processor with MMX™ Technology
- 16MB DRAM
- 512K Pipelined Burst Cache
- EV500 .28 Screen Pitch 15" Monitor (13.9" viewable)
- 2MB 3-D 64-Bit PCI Graphics
- 1.6GB 12ms Ultra ATA Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Ensoniq® Wavetable Audio
- Altec™ Lansing ACS-41 Speakers
- TelePath® Modem *for Windows* with x2™ Technology**
- G-Series Desktop Case
- 104+ Keyboard & Microsoft® Mouse
- MS® Windows® 95 & Home Software Bundle
- ▸ **Color Bubble Jet Printer**
- Gateway Gold™ Service & Support for G-Series PCs

$1499 As low as× $52/mo.

G5-200

- Intel 200MHz Pentium Processor with MMX Technology
- 32MB DRAM
- 512K Pipelined Burst Cache
- CrystalScan®700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 2MB 3-D 64-Bit PCI Graphics
- 2GB 11ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- Altec Lansing ACS-41 Speakers
- TelePath Modem *for Windows* with x2 Technology**
- G-Series Desktop Case
- 104+ Keyboard & MS IntelliMouse™
- MS Windows 95
- Home Software Titles
- MMX Technology-Enhanced Software
- Gateway Gold Service & Support for G-Series PCs

$1799 As low as× $63/mo.

G6-233

- Intel 233MHz **Pentium® II** Processor with 512K Cache
- 32MB DRAM
- CrystalScan700 .28 Screen Pitch 17" Monitor (15.9" viewable)
- 4MB 3-D 64-Bit Graphics
- 4GB 11ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- ▸ **Boston Acoustics® MicroMedia™ 3-Piece Speaker System**
- TelePath Modem *for Windows*, with x2 Technology**
- G-Series Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95
- Home Software Titles
- MMX Technology-Enhanced Software
- Gateway Gold Service & Support for G-Series PCs

$2399 As low as× $84/mo.

G6-266 BEST BUY

- Intel 266MHz **Pentium II** Processor with 512K Cache
- 64MB DRAM
- ▸ **EV900 .26 Screen Pitch 19" Monitor** (18" viewable)
- 4MB 3-D 64-Bit Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- ▸ **Boston Acoustics MicroMedia 3-Piece Speaker System**
- TelePath Modem *for Windows*, with x2 Technology**
- G-Series Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95
- Home Software Titles
- MMX Technology-Enhanced Software
- Gateway Gold Service & Support for G-Series PCs

$2999 As low as× $104/mo.

G6-300XL

- Intel 300MHz **Pentium II** Processor with 512K Cache
- 64MB DRAM
- ▸ **EV900 .26 Screen Pitch 19" Monitor** (18" viewable)
- 4MB 3-D 64-Bit Graphics
- TV/FM Tuner Card
- 8GB 8.5ms Ultra ATA Hard Drive
- ▸ **DVD-ROM Drive & DVD Decoder Card**
- 3.5" Diskette Drive
- Ensoniq Wavetable Audio
- ▸ **Boston Acoustics MicroMedia 3-Piece Speaker System**
- TelePath Modem *for Windows* with x2 Technology**
- G-Series Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95
- Home Software Titles
- MMX Technology-Enhanced Software
- Gateway Gold Service & Support for G-Series PCs

$3799 As low as× $132/mo.

Gateway Extras

(Some items only available to new or existing Gateway customers or with the purchase of a system.)

- Epson® Stylus® COLOR 400 Ink Jet Printer **$199**
- MS SideWinder™ 3D Pro Joystick **$59**
- Education Software Bundle Grades K-3 or Grades 4-8 **$99** (each)

Please call for current pricing on RAM and other upgrades.

** *On-site service is available to most locations in the continental United States, Alaska, Hawaii, Puerto Rico and Canada after you and your Gateway technician determine an on-site visit is necessary. On-site service is provided by PC Technology Services, Inc. On-site is not available for any monitor, mouse, keyboard, E-1000 PC or portable system. Write or call for a free copy of the on-site service agreement.*

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000 EASYPAY
LOW MONTHLY PAYMENTS
Call for details about how you can receive Quicken® Deluxe 6.0.

GATEWAY2000
"You've got a friend in the business."®

800-846-2065

www.gateway.com

G-Series Multimedia PCs For The Home

Barn Burnin' Values

Get more for your money with GATEWAY™ PCs!

Gateway G-Series Multimedia *PC*

G6-266 BEST BUY

- Intel® 266MHz **Pentium® II** Processor with 512K Cache
- 64MB DRAM
- ▸ **EV900 .26 Screen Pitch 19" Monitor** (18" viewable)
- 4MB 3-D 64-Bit Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq® Wavetable Audio
- ▸ **Boston Acoustics® MicroMedia™ 3-Piece Speaker System**
- TelePath® Modem *for Windows*, with x2™ Technology**
- G-Series Mid-Tower Case
- 104+ Keyboard & Microsoft® IntelliMouse™
- MS® Windows® 95
- Home Software Titles
- MMX™ Technology-Enhanced Software
- Gateway Gold™ Service & Support for G-Series PCs

$2999 As low as× $104/mo.

Gateway GP-Series Professional *PC*

GP6-266 BEST BUY

- Intel 266MHz **Pentium II** Processor with 512K Cache
- 64MB DRAM
- ▸ **EV900 .26 Screen Pitch 19" Monitor** (18" viewable)
- 4MB 3-D 64-Bit Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- GP-Series Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95
- MS Office 97, Small Business Edition plus Encarta® 97
- Gateway Gold Service & Support for GP-Series PCs

$2899 Business Lease† $107/mo.

Please call for other configurations. We custom build each GATEWAY 2000® system to your specifications.

Gateway Destination™ Big Screen *PC/TV*

D5-200 BEST BUY

- Intel 200MHz Pentium® Processor with MMX Technology
- 32MB SDRAM
- 512K Pipelined Burst Cache
- Destination 31" VGA Monitor
- 2MB Graphics Accelerator with Cable-Ready TV Tuner
- 4GB 11ms Ultra ATA Hard Drive
- ▸ **DVD-ROM Drive & DVD Decoder Card**
- 3.5" Diskette Drive
- Ensoniq Wavetable Audio
- ▸ **Boston Acoustics MicroMedia 3-Piece Speaker System**
- TelePath Modem *for Windows* with x2 Technology**
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad® Pointing Device
- Wireless Field Mouse® Remote
- MS Windows 95
- Home Software Titles
- Gateway Gold Service & Support◆ for Big Screen PC/TVs

$2999 As low as× $104/mo.

Gateway Solo™ Portable *PC*

9100XL BEST BUY

- ▸ **13.3" XGA TFT Color Display**
- Intel 233MHz Pentium Processor with MMX Technology
- 64MB SDRAM (expandable to 192MB)
- 256K Pipelined Burst Cache
- ▸ **4MB EDO Video RAM (1280 x 1024 external)**
- ▸ **Removable Combo 6X min/11X max CD-ROM & 3.5" Diskette Drive**
- USB Ports & Zoomed Video
- NTSC/PAL Video Input & Output
- 5GB Hard Drive
- Premium 16-Bit Wavetable Sound & Stereo Speakers
- PCMCIA Modem with x2 Technology**
- Two 12-Cell Lithium Ion Batteries & AC Pack
- 88-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Executive Carrying Case
- Gateway Solo Mini Docking Station
- MS Windows 95
- MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service & Support for Portable PCs

$5899 As low as× $205/mo.

GSA Schedule # GS-35F-4565G

Toll Free from Canada
800-846-3609

Toll Free from Puerto Rico
800-846-3613

800-846-2065

www.gateway.com

pentium® II PROCESSOR

610 Gateway Drive • P.O. Box 2000 • N. Sioux City, SD 57049-2000 • Phone 605-232-2000
TDD 800-846-1778 • Fax 605-232-2023 • FaxBack® 800-846-4526 • International FaxBack Access 605-232-2561
Component Add-On Sales 800-846-2080 • Sales Hours: 7am-10pm Weekdays, 8am-8pm Saturdays & Sundays (CT)

© 1997 Gateway 2000, Inc. GATEWAY 2000, black-and-white spot design, CrystalScan, EZ Pad, Field Mouse, "G" logo, TelePath and "You've got a friend in the business" slogan are registered trademarks, and Destination, GATEWAY, Gateway Gold, Kid's BackPack and Gateway Solo are trademarks of Gateway 2000, Inc. Not all Gateway E-Series PCs, NS Series servers, Destination systems, G-Series PCs and GP-Series PCs contain the Pentium II processor. The Gateway Solo PC does not contain the Pentium II processor. The Intel Inside Logo, Intel, IMM and Pentium are registered trademarks, and MMX is a trademark of Intel Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. All prices and configurations are subject to change without notice or obligation. Prices do not include shipping or applicable sales tax. Many Gateway 2000 products are custom engineered to Gateway 2000 specifications, which may vary from the retail versions of the software and/or hardware in functionality, performance or compatibility. ×Financing available on approved credit issued and administered by MBNA America® Bank, N.A. Payments based on 36-month term at an Annual Percentage Rate as low as 14.9%. †Leasing arranged by independent leasing companies to qualified commercial customers. Lease payments based on 36-month term. Lease terms subject to change without notice or obligation.

TELECOMMUTING & Home Office

EXPOSITION & CONFERENCE

October 15–17, 1997
Moscone Convention Center
San Francisco, CA

Corporate Solutions Through Remote Access

Virtual Offices... Remote Business Locations... Work-at-Home Employees... they're all part of a movement that's reshaping the American workplace. By the year 2000, this shift of the workforce will be 55 million workers strong.

Productivity-enhancing technology

Telecommuting & Home Office Exposition & Conference offers you the solutions, strategies and products to make this monumental shift possible. You'll see:

- remote access technology
- networking & telecommunications equipment
- internet access providers
- computer hardware & software
- products & services for remote offices
- financial, legal, insurance & management consulting services

An educational, business-to-business environment

If you're an executive or network manager or facilities manager charged with telecommuting your department, or a current telecommuter or home office worker, Telecommuting & Home Office Exposition & Conference is a must-attend event for you! The conference provides pragmatic tips on costs vs. benefits of telecommuting, technology trends, human resource issues, and more. Corporate case studies and insights from successful home-based workers round out the program.

Sponsored by:

FLAGSHIP SPONSOR NetworkWorld · PC WORLD · Forbes · INCOME OPPORTUNITIES · Steelcase · Macworld · ASAP · Forbes · Vendors' ISDN Association · MOBILE OFFICE ASSOCIATION INT'L · IDC/LINK · FAST COMPANY · Mobile Office Vehicles

TELECOMMUTING & HOME OFFICE EXPOSITION & CONFERENCE

owned by: IDG WORLD EXPO

managed by: MHA EVENT MANAGEMENT

Send more information on Telecommuting & Home Office Exposition & Conference!

PCW

I am interested in: ❑ **Attending** ❑ **Exhibiting**

Name _____

Company _____

Address _____

City/State/Zip _____

Phone _____ Fax _____

email _____

Mail to: MHA Event Management, 1400 Providence Highway, P.O. Box 9127, Norwood, MA 02062. Or Fax to: 617-440-0357

THIS IS NOT A REGISTRATION FORM.

For more information, call 800-393-THOE

See THOE on the WWW: http://www.mha.com/thoe/

Circle 221 on reader service card

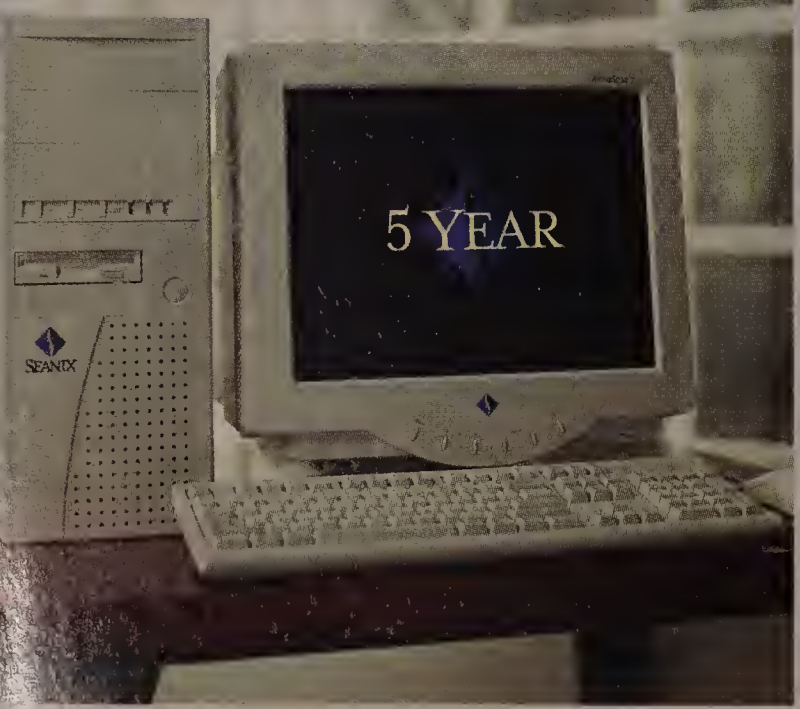
Our quality relationship

"We bought a Seanix Baby Grand to use a home and liked the price so much we sent one to college with our grandson."

Industry's Leading Warranty

5-year limited parts & labor warranty on motherboard, CPU, memory & video card

3-year limited parts & labor warranty on monitor & all other components



The price got their attention, but what impressed the McCloud's was the Seanix desire to build a quality relationship for a lifetime of computing.

What's behind a quality Seanix relationship?

Reliability... At Seanix we custom build systems under the highest quality con standards. All of our PCs are 100% tested through every stage of the manufactu process. These extreme measures have earned our factories the world class distin of being ISO 9001 and 9002 certified. In other words, our systems are built to

Adaptability... We design, engineer and manufacture our own superior qualit motherboards and video cards. This gives us the edge when it comes to incorpor and adapting new technology into our systems. Like our new Pentium® II proc based system with perfomance and productivity enhancing features including A SDRAM, UltraDMA and OnNow support.

5-Year Warranty... We are so convinced our quality will meet your expectations that we back every system with a 5-year limited warranty, which is the best in the industry.

Value... When you add up all the state-of-the-art technology, performance and adaptability Seanix has to offer, then consider the unbeatable pricing, Seanix systems are an incredible value.

So, if you're interested in a quality relationship with a computer company that is setting new standards of excellence, call Seanix today. Our systems will exceed your expectations, at an unbeatable price.

SEANIX

Fax 712-233-3278 • Canada 888-973-
Int'l 1-712-255-3733

888•252•119

GSA Number GS-35F-4766G

started with a dynamite price.

BABY GRANDS* COMPLETE CONSUMER & BUSINESS SOLUTIONS

including monitor **only $999**

Seanix Baby Grand • CS
Intel 166MHz Pentium® Processor
with MMX™ Technology
512KB Internal Cache
16MB EDO Memory
WD 1.6GB Hard Drive
2MB EDO, 64-Bit PCI Video
14" Seanix Monitor, .28mm (12.9" v.i.s.)
16X/12X CD ROM Drive
33.6K Fax/Modem, Speaker Phone,
Voice Mail or 3COM® Ethernet Card
16-Bit Sound Card
Altec™ Lansing Speakers

$999 PER MO. $35.00

Seanix Baby Grand • TCO
Intel 166MHz Pentium Processor
with MMX Technology
512KB Internal Cache
16MB EDO Memory
WD 1.6GB Hard Drive
2MB EDO, 64-Bit PCI Video
15" Seanix Monitor,
.28mm (13.8" v.i.s.)
10/100 Ethernet Card
Intel LANDesk® Client
Manager 3.0
DMI 2.0 Compliant

$999 PER MO. $35.00

MMX™ intel inside pentium® II PROCESSOR

CONSUMER SERIES*

CS Price 166
Intel 166MHz Pentium Processor
with MMX Technology
512KB Internal Cache
32MB EDO Memory
WD 3.0GB Hard Drive
S-3 Virge, 2MB EDO 3D, 64-Bit PCI Video
15" Seanix Monitor, .28mm (13.8" v.i.s.)
16X/12X CD ROM Drive
33.6K Fax/Modem, Speaker Phone, Voice Mail
16-Bit Sound & Microphone
Altec Lansing Speakers
Microsoft Home Essentials®

$1349 PER MO. $48.00

CS Price 200 **$1499** PER MO. $53.00
CS Price 233 **$1649** PER MO. $58.00

CS Value 166
Intel 166MHz Pentium Processor
with MMX Technology
512KB Internal Cache
64MB SDRAM
WD 4.0GB Hard Drive
Matrox Mystique 4MB SGRAM, 3D
17" Seanix Monitor, .28mm (15.8" v.i.s.)
24X/12X CD ROM Drive
56K Fax/Modem, Speaker Phone, Voice Mail
Ensoniq® AudioPCI™ Wavetable & Microphone
Altec Lansing Speakers
Microsoft Home Essentials

$1849 PER MO. $65.00

CS Value 200 **$1999** PER MO. $70.00
CS Value 233 **$2149** PER MO. $76.00

CS Power2 233
Intel 233MHz Pentium II Processor
512KB Internal Cache
64MB SDRAM
WD 6.0GB Ultra DMA Hard Drive
Matrox Millenium II 4MB WRAM
17" Seanix Monitor, .28mm (15.8" v.i.s.)
24X/12X CD ROM Drive
56K Fax/Modem, Speaker Phone, Voice Mail
Ensoniq AudioPCI Wavetable & Microphone
Altec Lansing ACS 400 + 250 Subwoofer
Microsoft Home Essentials

$2799 PER MO. $98.00

CS Power2 266 **$2899** PER MO. $102.00
CS Power2 300 **$3199** PER MO. $112.00

CS Price2 233
Intel 233MHz Pentium® II Processor
512KB Internal Coche
32MB EDO Memory
WD 3.0GB Hard Drive
S-3 Virge, 2MB EDO 3D, 64-Bit PCI Video
15" Seanix Monitor, .28mm (13.8" v.i.s.)
16X/12X CD ROM Drive
33.6K Fox/Modem, Speaker Phone, Voice Mail
16-Bit Sound & Microphone
Altec Lansing Speakers
Microsoft Home Essentials

$1949 PER MO. $69.00

CS Price2 266 **$2099** PER MO. $74.00
CS Price2 300 **$2399** PER MO. $84.00

CS Value2 233
Intel 233MHz Pentium II Processor
512KB Internal Cache
64MB EDO Memory
WD 4.0GB Hard Drive
Matrox Mystique 4MB SGRAM, 3D
17" Seanix Monitor, .28mm (15.8" v.i.s.)
24X/12X CD ROM Drive
56K Fax/Modem, Speaker Phone, Voice Mail
Ensoniq AudioPCI Wavetable & Microphone
Altec Lansing Speakers
Microsoft Home Essentials

$2499 PER MO. $88.00

Hot! **CS Value2 266** **$2599** PER MO. $91.00
CS Value2 300 **$2899** PER MO. $102.00

CS DVD2 233
Intel 233MHz Pentium II Processor
512KB Internal Cache
64MB SDRAM Memory
WD 6.0GB Ultra DMA Hard Drive
Matrox Millenium II 4MB WRAM
17" Seanix Monitor, .28mm (15.8" v.i.s.)
Toshiba DVD ROM
56K Fax/Modem, Speaker Phone, Voice Mail
Ensoniq AudioPCI Wavetable & Microphone
Altec Lansing ACS 400 + 250 Subwoofer
DVD Title Pack
Microsoft Home Essentials

$3149 PER MO. $111.00

Hot! **CS DVD2 266** **$3249** PER MO. $114.00
CS DVD2 300 **$3549** PER MO. $125.00

BUSINESS SERIES*

TCOe 166
Intel 166MHz Pentium Processor
with MMX Technology
512KB Internal Cache
32MB SDRAM Memory
WD 3.0GB Hard Drive
S-3 Virge, 2MB EDO 3D, 64-Bit PCI Video
17" Seanix Monitor, .28mm (15.8" v.i.s.)
16X/12X CD ROM Drive
3COM Ethernet Card
Lotus® SmartSuite® or Corel® WordPerect 7 Suite
Intel LANDesk Client Manager 3.0
DMI 2.0 Compliant

$1599 PER MO. $56.00

TCOe 200 **$1749** PER MO. $62.00
TCOe 233 **$1899** PER MO. $67.00

TCO2 233
Intel 233MHz Pentium II Processor
512KB Internal Cache
32MB EDO Memory
WD 3.0GB Hard Drive
S-3 Virge, 2MB EDO 3D, 64-Bit PCI Video
17" Seanix Monitor, .28mm (15.8" v.i.s.)
16X/12X CD ROM Drive
3COM Ethernet Card
Lotus SmartSuite or
Corel WordPerfect 7 Suite
Intel LANDesk Client Manager 3.0
DMI 2.0 Compliant

$2249 PER MO. $79.00

TCO2 266 **$2499** PER MO. $88.00
TCO2 300 **$2699** PER MO. $95.00

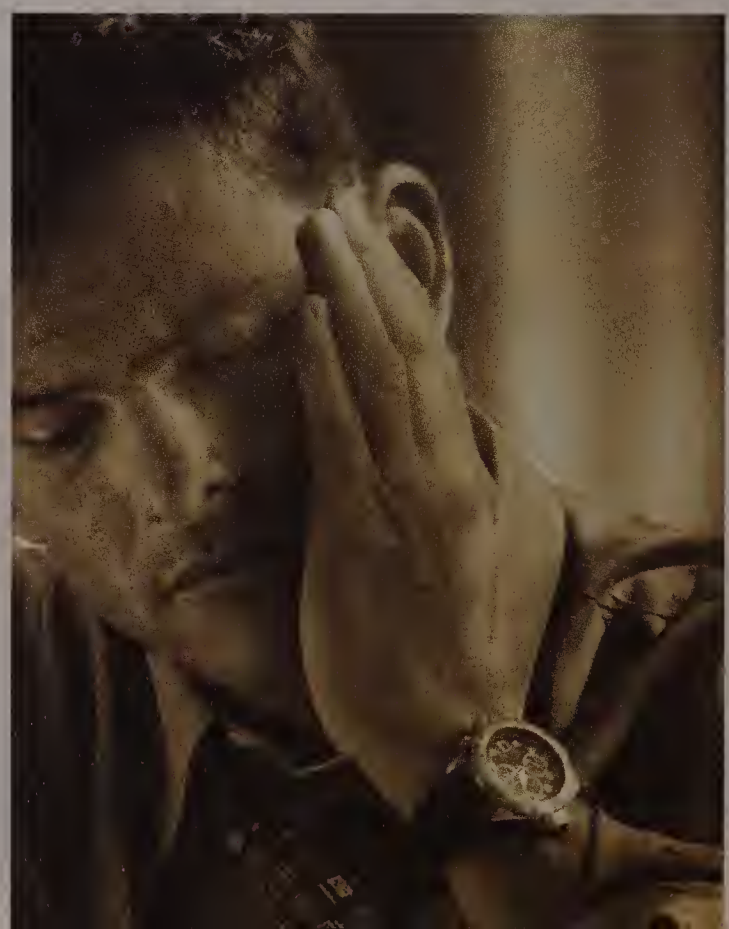
Coming Soon
SEANOTE
Ask your representative how many C-Notes it takes to buy a Seanote

*All systems come standard with 3.5 Diskette Drive, Mini-Tower Versatile Case, 104-Key Keybaard, Microsoft IntelliMouse™ and Windows® 95

Prices and configurations valid for sales in the USA only. Specifications on prices and configurations are subject to change without notice. Prices do not include shipping charges or applicable taxes. The Intel Inside Logo, Pentium, Pentium II are registered trademarks and MMX is a trademark of the Intel Corporation. Microsoft, Windows and Window NT are registered trademarks of Microsoft Corporation. All other service marks, trademarks and registered trademarks are the property of their respective companies. Business leases are based on 36 months. Lease rates are subject to change without notice or obligation.

Circle 226 on reader service card

A MOTHERBOARD DOESN'T CARE WHO YOU ARE, WHAT YOU NEED, OR IF YOU EVEN KNOW WHERE IT IS.



We'll show you. A motherboard is made of metal, plastic, and solder—materials which have yet to show signs of human compassion. It doesn't care if you need to upgrade it, or get at anything around it. To help out, AST® introduces the FlexChassis design—a feature that allows easy access to the system's major components in seconds. No tools required. Since even the best technology will one day need upgrading, AST is here to help you do it right. For more information about AST Bravo PCs featuring Intel® Pentium® processors, call 1-800-945-2278.

Bravo (Desktop and Mini-Tower)		
200 MHz Intel Pentium processor with MMX™ technology	2 MB graphics memory expandable to 6 MB	512 KB L2 cache
3 GB UltraDMA-33 hard disk drive	Manageability software utilities • Intel LANDesk™ 3.0 • McAfee® VirusScan™ and WebScan™	16X maximum speed CD-ROM
Integrated 10/100 Ethernet		Includes choice of Microsoft® Windows® 95 or Windows NT® 4.0

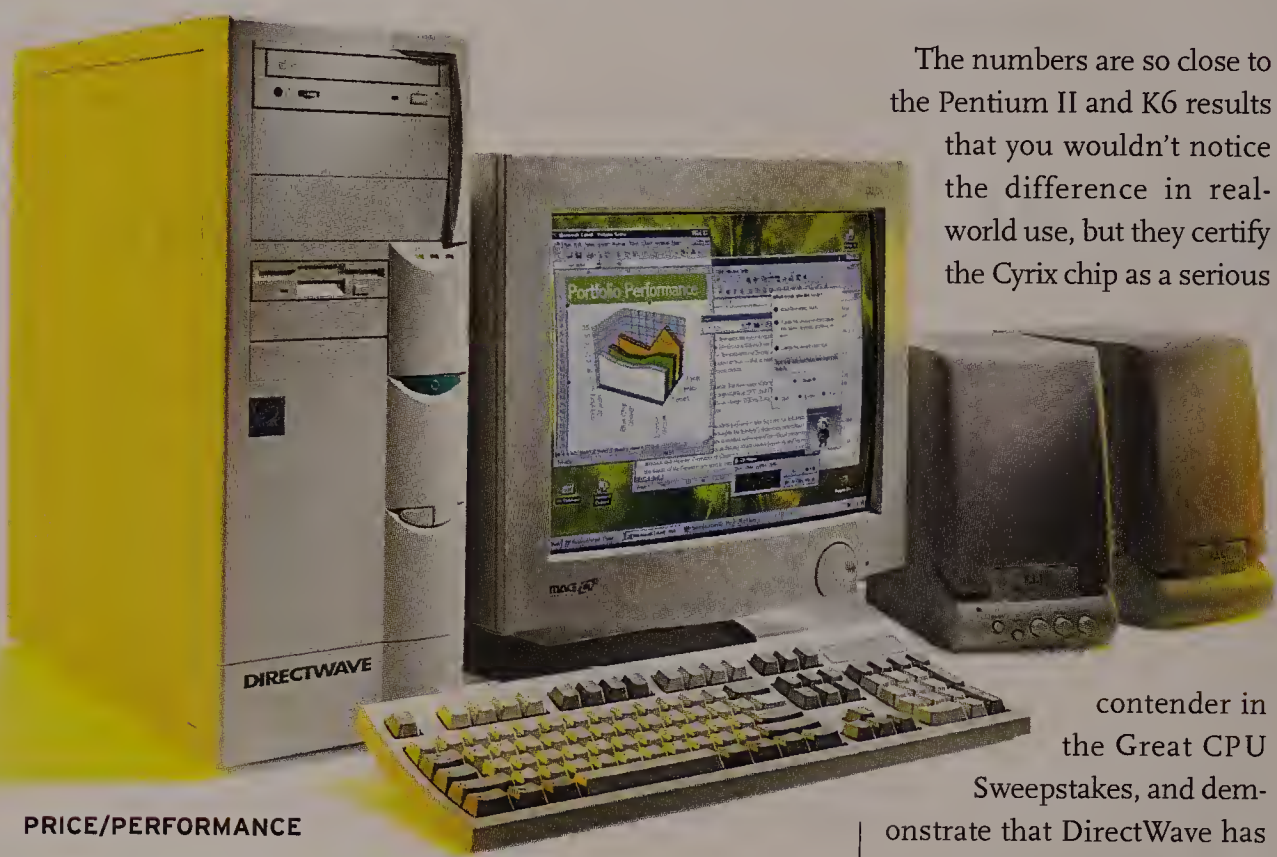
AST® COMPUTER

Working for your business.™

© 1997 AST Research, Inc. All rights reserved. AST and the AST logo are registered trademarks and Working For Your Business is a trademark of AST Research, Inc. The Intel Inside Logo and Pentium are registered trademarks and LANDesk and MMX are trademarks of the Intel Corporation. Microsoft, Windows and Windows NT are registered trademarks of the Microsoft Corporation. McAfee is a registered trademark and VirusScan and WebScan are trademarks of McAfee Associates, Inc.

NEW PRODUCTS

DirectWave's Cyrix-Based PC: PII-Class Power for $2299



PRICE/PERFORMANCE WINNER: The Cyrix-based DirectWave MVP V C2-233 posted impressive PC WorldBench numbers for its CPU class and doesn't skimp on built-in features.

DESKTOP

IF YOU'RE IN the market for a fast and feature-packed PC at a great price, the choices keep expanding. DirectWave's **MVP V C2-233**—the first shipping PC we've tested that's based on Cyrix's 6x86MX-PR233 processor—offers excellent price/performance and is loaded with state-of-the-art hardware.

DirectWave's MVP V line also includes systems based on several competing CPUs: the 233-MHz Intel Pentium MMX and Pentium II, and the 233-MHz AMD K6. The Cyrix-based C2-233 (which actually runs at 188 MHz) scored an impressive 255 on the PC WorldBench test suite, edging out the 249 average of two AMD K6-PR233 PCs, and the 247 average of three Pentium II-233 systems we've tested. Surprisingly, the C2-233's score was very near the 261 average of six Pentium II-266s we've also tested. The DirectWave shone on individual application tests as well.

The numbers are so close to the Pentium II and K6 results that you wouldn't notice the difference in real-world use, but they certify the Cyrix chip as a serious contender in the Great CPU Sweepstakes, and demonstrate that DirectWave has put together a system that showcases its potential—at the eyebrow-raising price of $2299. At this writing, this is at least a couple of hundred dollars cheaper than any of the comparable Pentium II computers we've seen. You can find cheaper Pentium II–class systems powered by K6-PR233 CPUs, but they're not quite as fast and their hardware isn't as impressive.

Inside this system is 32MB of SDRAM, 512K of pipeline-burst secondary cache, a 6.5MB hard drive, and a 4MB Matrox Millennium graphics card. The unit we tested came with a 33.6-kilobits-per-second fax-modem with voice and speakerphone capabilities; by the time you read this, DirectWave expects to be shipping the system with a 56-kbps modem based on the K56flex specification. Similarly, the Toshiba 16X CD-ROM drive in our test unit is to be replaced by a Toshiba 24X model, and the Sound Blaster 32 PnP audio card will be replaced by the Sound Blaster 64.

The C2-233 comes with an easy-on-the-eyes 17-inch MAG InnoVision EJ700 monitor; its unique single rotary dial makes tweaking monitor settings a snap. On the audio front, the C2-233 includes a Wave 360 surround sound system, one of the finest-sounding two-piece speaker setups we've heard. However, the basic package lacks a subwoofer, an audiophile accessory found in many systems these days. (DirectWave offers an Arkins Acoustics subwoofer as a $50 option.)

As for software, the C2-233 comes with Windows 95 and Corel WordPerfect Suite 8 installed, along with Shark

MVP V C2-233

PRO: Loaded, no-compromise system at a budget price.

CON: Poor manuals.

VALUE: Excellent price/performance value.

DirectWave
800/882-8108
www.directwave.com
List price: $2299

READER SERVICE NO. 760

Leopard speakerphone software and a variety of audio and communications utilities. A printed Windows 95 manual is supplied, but we didn't get a modem manual, and the overall quality of the other documentation is poor. That's not unusual in today's PC market, but it can cause problems for inexperienced users.

If you're looking for an impressive system and are on a limited budget, the DirectWave will fill the bill nicely—at least until the next generation of PCs comes along.

—*Stan Miastkowski*

HiNote Ultra 2000: Big Screen in Slim Package

NOTEBOOK

FORGET DESKTOP replacement: Many desktop systems fall short of the **Digital HiNote Ultra 2000** when it comes to display. Not only is the 14.1-inch screen on Digital's latest portable the largest we've seen on a notebook to date, but it also provides more actual viewing area than most 15-inch desktop monitors. This lovely, spacious panel dominates the HiNote like a blue sky over a prairie vista, and spreadsheet wranglers will love the ability to see so many columns and rows without scrolling.

Moreover, we could easily spend long periods of time looking at it. The 1024 by 768 resolution, which often produces eyestrain on a 15-inch desktop monitor, is very easy to look at on this flicker-free display. The only distraction on the preproduction unit I used was slightly uneven lighting: A small section at the bottom right of the active-matrix screen looked a little washed-out.

This Pentium MMX-166–based portable is high-end corporate all the way, suitable for both office use and the road. It comes with a removable 20X CD-ROM drive, a 2GB hard drive, 32MB of RAM, and 512K of secondary cache. Although we didn't test it formally, it seemed very snappy, launching applications such as Word and Excel in only a couple of seconds.

DESKTOP-SIZE DISPLAY: Digital's HiNote Ultra 2000 has a 14.1-inch screen—and a $5999 price.

The Ultra 2000 also has better connectivity than most of its portable peers, packing a 33.6-kbps modem (upgradable to 56 kbps), an ethernet connection, and a fast 4-megabits-per-second infrared port. Both the network and the modem ports are built-in, leaving the two PC Card slots free for other devices. Preloaded software includes the TranXit file transfer utility, Internet Explorer, the WebEx offline browser, AudioRack 32, and ClientWorks, a utility that lets network administrators configure the notebook remotely. The price, however, does not include any apps. You'll have to pay extra for bundles such as Microsoft Office 97.

Expansion options include a port replicator ($379) and a multimedia docking station ($899), both of which add a Universal Serial Bus port. The lower-cost port replicator has a bay you can use to charge a second battery pack. However, the replicator tilts the notebook keyboard forward, so you should make sure the angle is comfortable before you buy it—or use an external keyboard.

The Ultra 2000 has one main drawback—a budget-stressing $5999 price. For that money, you could buy a good desktop PC *and* a notebook. Measuring a foot wide and 10 inches deep, the Ultra 2000 will also take up more of your desk than most notebooks and would be extremely awkward to use in the coach section of an airplane. Otherwise, however, it should travel very well. The Ultra 2000 weighs a little under six and a half pounds and measures only 1.4 inches thick—much lighter and thinner than any of the notebooks we've seen with 13.3-inch screens—and its AC adapter is very small, not much bigger than a pack of cards. Total traveling weight is a comfortable 7.2 pounds. Despite its Twiggy-like breadth, the Ultra 2000 feels very solid and sturdy, with little flex in the screen panel. It should be a strong contender for our Top 20 Notebook PCs chart in the months to come.

—*Bryan Hastings* ▶

Digital HiNote Ultra 2000

PRO: Largest notebook screen available, network-ready, sturdy, very thin.

CON: Very expensive.

VALUE: Great corporate notebook.

Digital Equipment Corp.
800/722-9332
www.windows.digital.com
Street price: $5999

READER SERVICE NO. 761

EDITED BY
Yardena Arar and Laurianne McLaughlin

CONTENTS

102 DirectWave MVP V C2-233 PC
103 Digital HiNote Ultra 2000
104 Sony VAIO PCG-707C notebook, Seanix Baby Grand PCs, StreetSound audio adapter
108 Alps MD-1000 color printer, Diamond Multimedia GyroMouse, Lexmark 1000 Color Jetprinter
110 AITech PC/TV AirLink, Diamond Multimedia Maximum DVD Kit
114 Sony CPJ-D500 LCD projector, Number Nine Revolution 3D graphics card, Tumi Safecase
118 QuarkXPress 4.0
122 Microsoft FrontPage 98, Symantec Visual Page, NEC Systems Laboratory NetMC
123 Adaptec Easy CD Creator Deluxe
126 Merriam-Webster's Collegiate Dictionary Deluxe Audio Edition CD-ROM
128 Adobe PhotoDeluxe 2.0, Corel Paradox 8

INTERNET

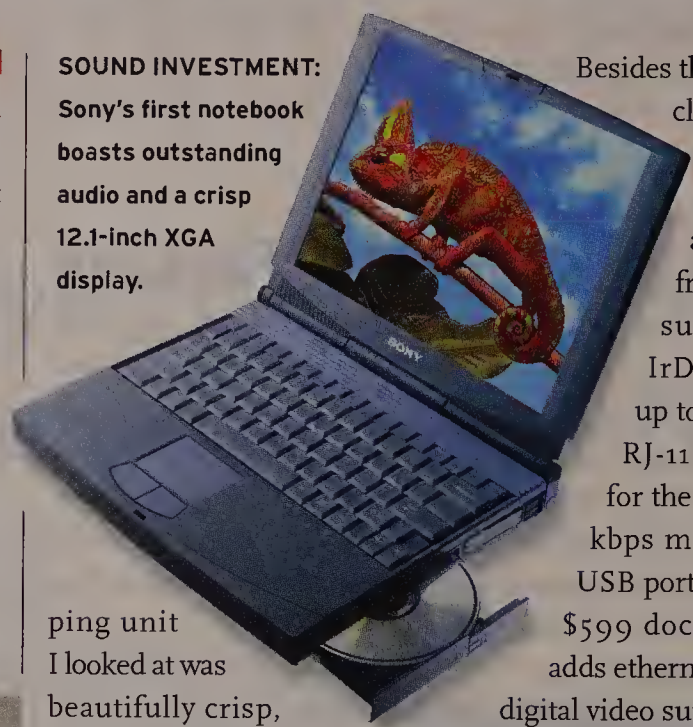
FOR MORE PRODUCT news and the latest announcements, check out the PC World Daily News Service at www.pcworld.com/news.

Sony's Chic New Multimedia Notebook

NOTEBOOK

COLOR-COORDINATED with its desktop siblings, Sony's first VAIO notebook isn't just another pretty face. Based on Intel's Pentium MMX-166 processor, the gray and violet-trimmed **PCG-707C** makes a formidable debut in the mobile multimedia arena.

The 12.1-inch active-matrix LCD screen on this $4499 notebook isn't the largest available, but the 1024 by 768 high-color display on the shipping unit I looked at was beautifully crisp, and text was surprisingly legible for its tiny size. Sound from the built-in stereo speakers was as good as I've heard on a notebook, and remote control headphones let you enjoy—and control—audio CDs on the removable 14.5X CD-ROM drive, even when the notebook is closed.



SOUND INVESTMENT: Sony's first notebook boasts outstanding audio and a crisp 12.1-inch XGA display.

Connectivity will never be a problem with this notebook. Besides the traditional, clearly labeled set of built-in ports, you also get an infrared port that supports fast IrDA (at speeds up to 4 mbps), an RJ-11 phone jack for the built-in 33.6-kbps modem, and a USB port. An optional $599 docking station adds ethernet, SCSI, and digital video support.

The PCG-707C ships with 32MB of RAM, a 2.1GB hard drive, and a huge software bundle (although business users might have preferred Microsoft Office 97 to Works 4.0). Although it's only 1.5 inches thick and not too heavy (about 7.5 pounds with CD-ROM and floppy drives and AC adapter), the notebook feels sturdy. It's not cheap, and the verdict is still out on performance, but for presentations and other multimedia uses the PCG-707C is clearly poised to do battle with the competition.

—*Yardena Arar*

VAIO PCG-707C

PRO: Outstanding sound, beautiful 1024 by 768 display.

CON: Notebooks with bigger displays available for the same price.

VALUE: Excellent for presentations and other multimedia tasks.

Sony Electronics

800/476-6972

www.sony.com/pc

Street price: $4499

READER SERVICE NO. 764

QUICK TAKES

Plug-In PC Sound

WANT TO add sound capability to your PC without messing with its innards? Street Technologies' $79.95, cigarette pack-size, 8-bit StreetSound audio adapter plugs into the parallel port of a PC or notebook. There's a printer pass-through socket so you can have your Duke Nukem explosions and hard copies too—but only one or the other at a time. The StreetSound comes with an AC adapter, a set of headphones, and its own drivers. It doesn't support audio CD-quality stereo output, but for most Internet sound and .wav files, it's a quick and convenient way to get PC sound without fury. Street Technologies; 914/682-4300; www.streetinc.com.

READER SERVICE NO. 763

—*Michael S. Lasky*

Seanix's Baby Grand: Solid $999 System

NOTEBOOK

MOST PCS priced at $1000—widely held to be the sweet spot for buyers—have tended to be technologically challenged. Seanix's $999 **Baby Grand** is the first we've seen with a true-blue Intel Pentium MMX-166 inside, along with a useful selection of hardware.

Seanix is delivering its Baby in two configurations, both of which include a 1.6GB hard drive. The consumer-oriented Baby Grand CS features 16MB of EDO RAM, an 8X CD-ROM drive, a sound card, Altec Lansing ACS-90 speakers, and either a 33.6-kbps modem or a 3Com 10/100 ethernet card (a nice option for budget-minded businesses). The big compromises are the 14-inch (12.9-inch viewable area) monitor and the S3 Trio64–based PCI video card with only 1MB of video memory, which delivers 1024 by 768 resolution at 256 colors.

For businesses willing to sacrifice multimedia frills for a nicer display, the Baby Grand TCO ships without a CD-ROM drive, sound card, or speakers, and comes standard with the ethernet card only. However, the system's basic configuration includes 32MB of EDO RAM, a 15-inch monitor (a $99 option with the CS), a video card with 2MB of memory, and Intel LANDesk software for remote system management.

Both Baby Grands are well-built systems that use industry-standard components. The line is not designed for advanced graphics or heavy-duty applications; the TCO's lack of a CD-ROM drive will be a problem if you want to install applications that come on the discs. But for basic home, SOHO, or business use, these are solid systems at a barebones budget price.

—*Stan Miastkowski* ▶

Seanix Baby Grand CS and TCO

PRO: MMX technology for less than $1000.

CON: Small monitor, limited graphics card on CS; no CD drive on TCO.

VALUE: Good features, fair price.

Seanix

800/555-4031, 712/233-3278 (fax)

www.seanix.com

List price: $999

READER SERVICE NO. 762

NTRIGUED? IN THE BLINK OF AN EYE. IT'S GONE. THE 195HP V6 FOR POWERFUL PASSING. THE IGH-PERFORMANCE SUSPENSION, FOR A SUPERB RIDE. THE TRANSMISSION THAT SHIFTS IMPERCEPTIBLY. THE RESPON-IVE, VARIABLE-EFFORT STEERING, FOR PRECISE HANDLING. ALL THAT REMAINS IS THE BURNING DESIRE TO DRIVE IT.

INTRIGUE™

A SOPHISTICATED TWIST ON A SPORTS SEDAN

GM © 1997 GM Corp. All rights reserved. Buckle Up, America!

Circle 121 on reader service card

Oldsmobile
www.intriguecar.com

Envision an enterprise that's

completely compatible,

infinitely scalable, totally expandable,

easily manageable, and entirely mobile.

intel inside pentium® PROCESSOR

*Actual results may vary depending on usage. ©1997 Acer America Corporation. Acer and the Acer logo are registered trademarks, and AcerPower and AcerAltos are trademarks of Acer America Corporation and Acer Inc. Intel, the Intel Inside Logo, and Pentium are registered trademarks of Intel Corporation.

Introducing Acer's

mobile client server

solution — the new way to truly realize enterprise productivity.

Today, many companies are extending the enterprise into virtual offices. Add to that an increasingly mobile workforce, and a compatible, integrated solution becomes vital to ensure anytime, anywhere access to information.

By design, Acer's full range of Mobile Client Server solutions, like the new AcerPower™ Network Ready PC series with the Intel® Pentium® processor, provide compatibility, connectivity, security, mobility, accessibility, and manageability. And help you gain a competitive edge.

As one of the world's largest personal computer and component manufacturers, Acer has the core technological capabilities critical to your enterprise. Plus, the channel relationships and resources to provide you single-call support.

Acer's Mobile Client Server. Now you can have the compatibility you need to be endlessly productive.

With an industry leading 7-hour single battery notebook, Acer is redefining mobile solutions.*

With a new Pentium-based Network Ready PC for under $1,000, including monitor, Acer has a range of products that make sense.

AcerAltos™ servers have manageability built-in.

Acer®

1-800-558-ACER & select option 2, 1
www.acer.com/aac/

Alps' Challenger to the Ink Jet

PRINTER

INK JET PRINTERS have had a long-running monopoly on glorious color at an affordable price. Now a printer using ink-imbued ribbon cartridges is poised to compete.

The "micro-dry" inks in Alps Electric's **MD-1000** don't splatter or soak into the paper, so you can get great color without feeding it the expensive coated paper that ink jets prefer. Special ribbons let you add metallic accents or a glossy photo finish, and when a color runs out you have to replace only its cartridge; the cartridges on most budget ink jets hold three colors and must be completely replaced when any color is exhausted.

Up to now, Alps printers have been somewhat pricey: The cheapest cost $549. But the MD-1000 is street priced at $349, putting it squarely in economy ink jet territory. With coated paper, however, new budget ink jet printers handily match the colors and textures of the preproduction MD-1000 I tested.

This printer really excels with text, producing perfectly defined letterforms—especially impressive at its maximum resolution of 1200 by 600 dots per inch. The MD-1000 also allows you to add multiple colors by printing in so-called Overlay Mode, switching ribbon cartridges after printing the standard cyan, magenta, yellow, and black. Setup can be tricky, but the excellent manual explains it well. (A four-color ribbon lets you print up to seven colors at a time.)

Weaknesses? Performance is very slow. Alps rates the MD-1000 at 2 pages per minute in monochrome at 300 or 600 dpi—much slower than rated speeds of several equivalent ink jets. The ink is rather delicate and scratches off easily. Finally, the MD-1000 is surprisingly noisy.

—Dan Littman

Alps MD-1000

PRO: Splatter-free printing; glossy finish and metallics available.

CON: Slow, noisy.

VALUE: Good value for a unique technology.

Alps Electric

800/825-2577

www.alpsusa.com

Street price: $349

READER SERVICE NO. 765

QUICK TAKES

Lexmark's $139 Color Printer

FOR A bargain-basement street price, the Lexmark 1000 Color Jetprinter is fairly versatile, especially for school or family use. This $139 color ink jet can print on banners up to ten pages long or on T-shirt transfers; its 600-dpi resolution is high enough to handle both text and color images capably. But the 1000 Color Jetprinter's minimalist design has some drawbacks. It has neither an output tray nor an on/off button—just a reset switch. Its input guide, a stiff plastic outcropping from the rear of the printer, looks very breakable. And it can hold only one ink cartridge at a time, so you have to swap black and color supplies between print jobs. Lexmark International; 800/358-5835; www.lexmark.com.

READER SERVICE NO. 766

—Melissa Riofrio

Diamond Multimedia's Mouse That Soared

INPUT DEVICE

DIAMOND MULTIMEDIA'S new wireless mouse will work almost anyplace you want it to. Set the **GyroMouse** on your desk and it functions like a standard-issue mouse; pick it up and click the button on its underbelly, and it operates airborne up to 30 feet away from its cradle. At $100 it's pricey, but it's great for presentations or couch potato–style surfing.

Named for miniature built-in gyroscopes that track hand movement, the charcoal-gray GyroMouse is slimmer and slightly longer than a Microsoft mouse—but at 5.5 ounces it feels pleasingly solid. Installation simply involves hooking up the base unit to your computer's PS/2 or serial mouse port, and plugging in an AC adapter. The GyroMouse works with standard Microsoft or Logitech mouse drivers.

DESK OPTIONAL: The wireless GyroMouse works up to 30 feet from its cradle.

The GyroMouse communicates with its base unit by radio, so the cradle doesn't have to be within line of sight, as it does with infrared devices. The preproduction unit I tested ran out of power after 5 or 6 hours, but Diamond says shipping versions will operate for up to 8 hours without recharging (which takes 4 hours in the cradle). The unit shuts down automatically after sitting idle for 15 minutes.

Some quibbles: To operate the mouse off the desk, you can either keep the "belly" button depressed, which can get tiring, or double-click the button to keep the cursor active, which results in some drift when the cursor rests (something Diamond says will be fixed in the final version). Also, a slight lag in cursor response time makes the GyroMouse a poor choice for fast-moving games.

—Yardena Arar ▶

GyroMouse

PRO: Wireless, works on or off the desktop, software not required.

CON: Not great for high-speed games, expensive.

VALUE: Worthwhile if you're an occasional presenter.

Diamond Multimedia

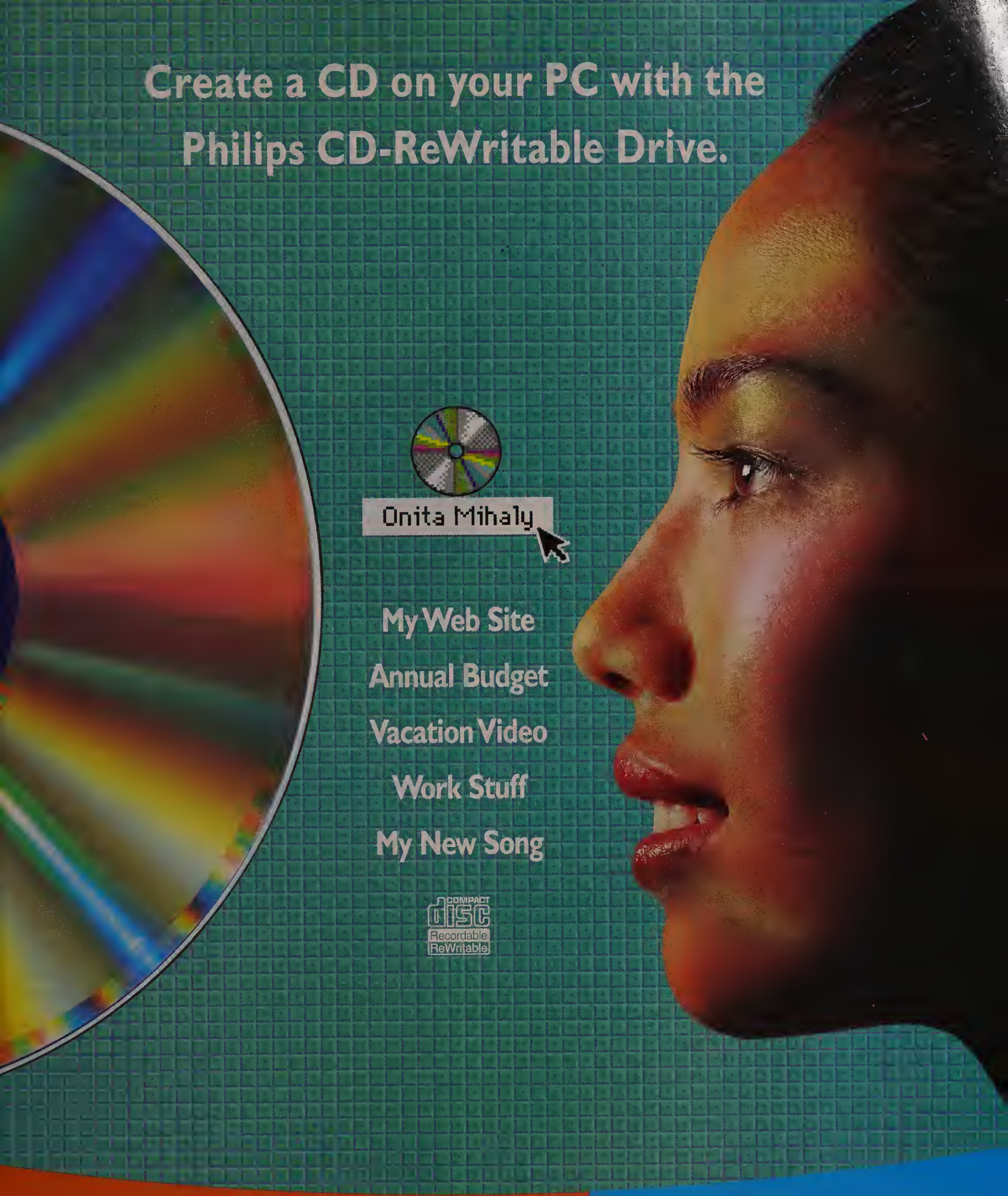
800/468-5846

www.diamondmm.com

Street price: $100

READER SERVICE NO. 767

Create a CD on your PC with the Philips CD-ReWritable Drive.



e new Philips CD-ReWritable Drive lets you save your world. Store your data, ınd, videos, pictures, drawings, files. You name it — and you can save it on a 650 MB Compact Disc. Plus the disc that you create can work on CD-ROM or DVD-ROM drives. The Philips CD-ReWritable Drive is affordable too. Now send CDs of things that matter to ı to people who matter to you. For more information: http://www.philips.com

PHILIPS

Let's make things better.

product is not intended for the unlawful copying of copyrighted material.

©1997 Philips Electronics North America Corporation

AITech's AirLink Puts Your PC on Your TV

PRESENTATIONS

WEB TV AND other set-top boxes bring the Internet to the small screen, but what about everything else you do on a computer? AITech International's $399 **PC/TV AirLink** lets you view presentations, play games, and surf the Web on your television set.

An inexpensive and unique alternative to dedicated presentation devices (or crowding around a small notebook screen), the PC/TV AirLink is a digital-to-analog scan converter that beams audio and video signals from a radio transmitter attached to your computer's VGA-out port and sound card to a receiver hooked up to a TV—up to 100 feet away.

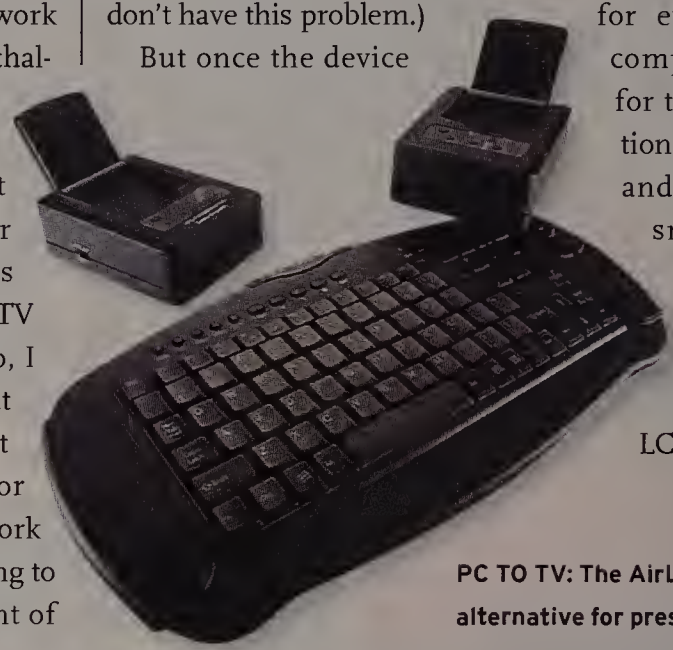
In addition to the lightweight, Walkman-size radio transmitter and receiver, the kit has a wireless, battery-powered keyboard with integrated joystick that communicates with the PC by three-way relay—infrared to radio receiver, UHF to radio transmitter, and infrared to a small receiver that attaches to the mouse and keyboard ports.

Hooking up a preproduction unit was easy. I attached the transmitter and IR keyboard receiver to a notebook, then hooked the radio receiver to the TV's audio/video ports.

Getting everything to work properly was more of a challenge. When I first powered up the kit, the TV, and the notebook, I got nothing but static. After resetting the notebook's display and changing the TV setting from TV to video, I got a desktop image, but the notebook display went dark—less than ideal for presenters who like to work with a notebook. According to AITech, about 70 percent of current notebook PCs will not support simultaneous viewing. (Desktop systems don't have this problem.)

But once the device was up and running, I found the infrared keyboard responsive and fun to use. For viewing text and spreadsheets, the low resolution of a boob tube makes it a poor substitute for even the smallest computer display. But for training, presentations, software demos, and Web surfing in small groups, the PC/TV AirLink is a low-cost alternative to large CRTs or high-price LCD projectors.

—Julie Campagna



PC TO TV: The AirLink offers a budget alternative for presentations.

PC/TV AirLink

PRO: Economical, lightweight.

CON: Can't view desktop simultaneously on TV and most notebooks; text is difficult to read.

VALUE: Affordable option for small group presentations.

AITech International

800/882-8184

www.aitech.com

List price: $399

READER SERVICE NO. 768

Diamond's DVD Kit: An Interim Solution

DVD-ROM

DIAMOND MULTIMEDIA'S first entry into DVD-ROM lugs the baggage of all first-generation DVD-ROM kits. Because it uses Toshiba's original SD-M1002 DVD-ROM drive, the **Maximum DVD Kit** can't read CD-Recordable discs; and by Diamond's own admission it spins CD-ROMs at less-than-dazzling 8X speed. Second-generation DVD-ROM drives, which don't have these problems, may be available by the time you read this, and should offer more value for the money. But if they're delayed, the $600 Maximum kit is worth considering.

The kit includes a full-length PCI-based DVD decoder card (make sure you have a free PCI slot with plenty of room around it) that supports MPEG-2 and Dolby AC-3 Surround sound. Unlike DynaTek's DVD471TII (see September's *New Products*), which requires no additional connections but works only with certain video cards, the Maximum uses a pass-through cable from the back of your video card to the DVD decoder board, so it can work with just about any video card. Simply attach the pass-through cable and connect your monitor to the DVD card instead of your video card. You'll need a Pentium-120 Windows 95 system with at least 16MB of RAM.

The Maximum's documentation is packed with photos, illustrations, and step-by-step installation instructions. The DVD-ROM titles that came with the shipping unit I examined include Electronic Arts' Wing Commander IV, Silent Steel by Tsunami, Activision's Spycraft, and Xiphias's Encyclopedia Electronica. Diamond's sophisticated DVD Navigator software allows you to display subtitles, pick camera angles, and search forward and backward on discs that support these features.

As a CD-ROM replacement Diamond's Maximum DVD Kit falls a little short. But if you can't wait for that impressive DVD sound and video, this product will get you going within 15 minutes.

—Dean Andrews ▶

Maximum DVD Kit

PRO: Great DVD control software, solid bundle.

CON: Slow CD-ROM speed, no CD-R playback, expensive.

VALUE: Worth it only if you can't wait for second-generation kits.

Diamond Multimedia

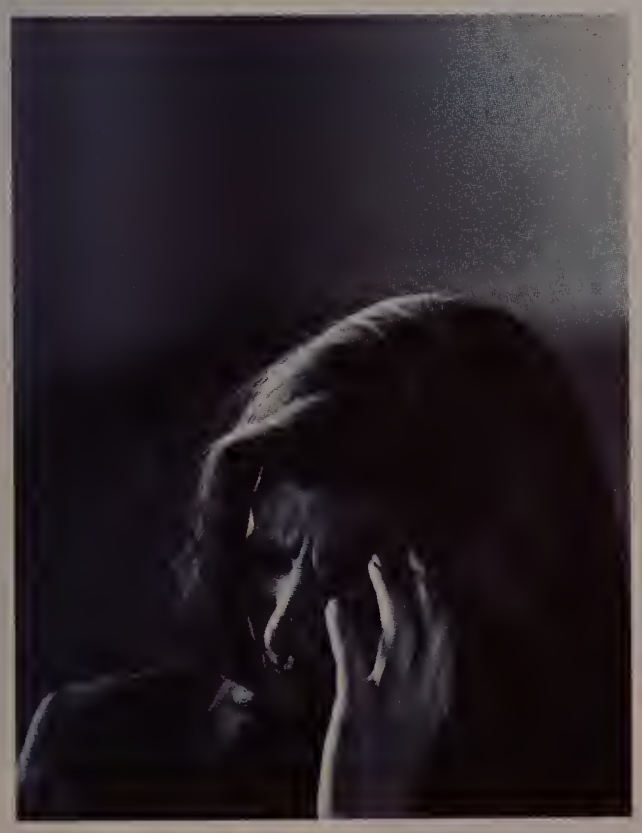
800/468-5846

www.diamondmm.com

Street price: $600

READER SERVICE NO. 769

A LAN COULD CARE LESS IF YOU'RE UNDERSTAFFED, OVERWORKED, OR EVEN EMPLOYED.



We can help. *A server isn't here to hold your hand. It's here to perform millions of operations per second. That's why at AST,® we're here to help you every step of the way. With management software that notifies you if there's a problem. And with a dedicated server support staff that's ready to solve those problems 24 hours a day, 7 days a week. We even have an option that includes on-site technician response within 4 hours. Because, sometimes, a helping hand is exactly what you need. For more information about AST Manhattan™ servers with Intel® Pentium® Pro processor, call* 1-800-945-2278.

Manhattan S Series

200 MHz Intel Pentium Pro processor, dual CPU capability

256 KB or 512 KB cache depending on model

64 MB ECC RAM standard memory, expandable to 1 GB

SCSI CD-ROM standard on all models

Three channel PCI Ultra/Wide SCSI disk array controller (array models)

PCI Ultra/Wide SCSI-3 adapter (non-array models)

445-watt power supply

Intel EtherExpress™ PRO/100B adapter

3-year on-site limited warranty

Optional GuardianCare℠ 4-hour on-site response program available

Fully certified for Novell® NetWare® and IntranetWare,® and Microsoft® Windows NT®

AST® COMPUTER

Working for your business.™

intel inside

PENTIUM®PRO PROCESSOR

©1997 AST Research, Inc. All rights reserved. AST and the AST logo are registered trademarks, Working for your business and Manhattan are trademarks, and GuardianCare is a servicemark of AST Research, Inc. The Intel Inside Logo and Pentium are registered trademarks and EtherExpress is a trademark of Intel Corporation. Novell, NetWare, and IntranetWare are registered trademarks of Novell, Inc. Microsoft and Windows NT are registered trademarks of Microsoft Corporation.

"My business can't stop

...I rely on Back-UPS

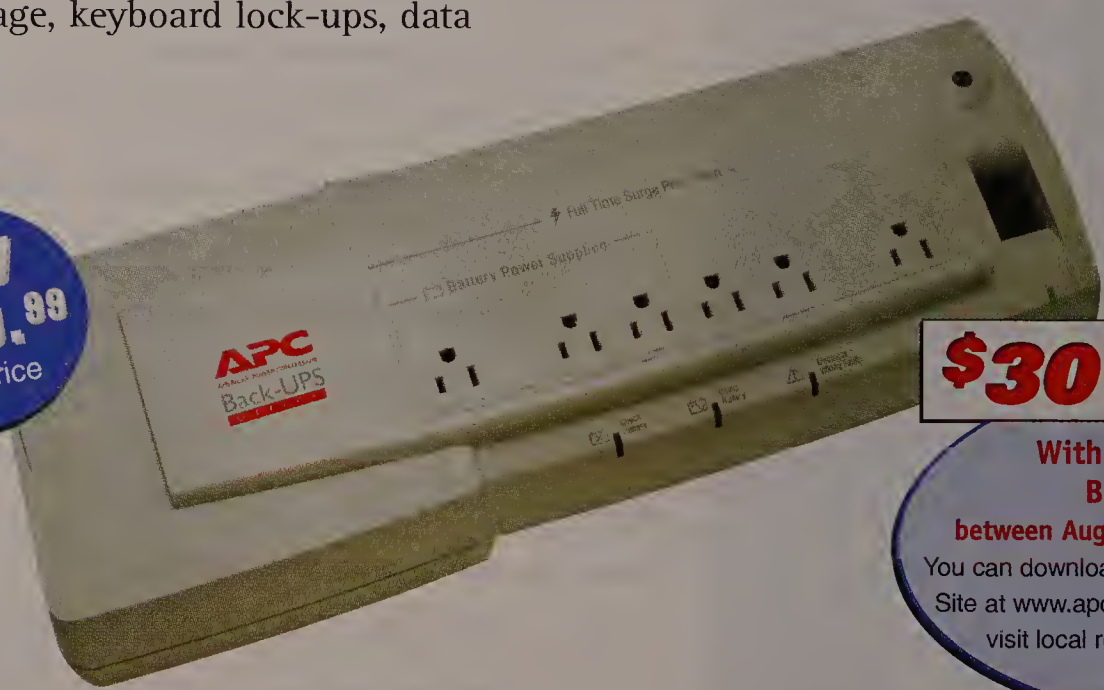
"I've got Back-UPS® Office™ from American Power Conversion. Back-UPS Office combines world class surge protection, a $25,000 equipment protection guarantee* and instant, uninterruptible battery back-up power.

So when the power goes out, and it will.... I have plenty of time to save what I am working on and shut down safely.

Plus, I am protected from surge damage, keyboard lock-ups, data loss and power problems transmitted to my workstation over data and power lines."

So, if you just bought your first computer, or run a company that needs hundreds, you can depend on the reliability and peace of mind that comes with APC products. Why? It's simple. APC protects more computers for more companies in more countries than anyone in the world.

Now, that's a reason to smile.



only $179.99 list price

$30 REBATE

With the Purchase of a Back-UPS Office between August 1 and October 31, 1997.
You can download redemption card from our Web Site at www.apcc.com/english/promo025.htm or visit local retailers below for more info.

APC's Back-UPS Office is available at:

The PC Zone — 800-258-2088 · MICRO CENTER · COMPUTER City · OfficeMax · STAPLES The Office Superstore · BEST BUY

APC has won more awards for reliability than all other UPS vendors combined.

FREE Consumer Catalog from APC

If you just bought your first computer, or run a company that needs hundreds, you can depend on the reliability and peace of mind that comes with APC products. APC protects more computers for more companies in more countries than anyone in the world.

❑ **YES!** I'd like to receive my FREE catalog.

❑ **NO,** I'm not interested at this time but please add me to your quarterly newsletter mailing list.

Name: _____

Title: _____ Company: _____

Address: _____

_____

City: _____ State: _____ Zip: _____ Ctry: _____

Phone: _____ Fax: _____

Brands of UPS used: _____ # _____

Brand of PCs used: _____ # _____

Brands of Servers used: _____ # _____

* Allow 6 - 8 weeks for delivery.

Please fill in all information completely for prompt service.

(888) 289-APCC x8239
Fax: (401) 788-2797
www.apcc.com

©1997 APC. All Trademarks are the property of their owners. BF20EBRC • E-mail: apcinfo@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC®
AMERICAN POWER CONVERSION

DEPT. P3-BO
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

vhen the power does...

ffice™ from APC."

FREE Consumer Catalog

☐ **YES!** I'd like to receive my FREE catalog.

☐ **NO,** I'm not interested at this time but please add me to your quarterly newsletter mailing list.

Name: _____

Title: _____

Company: _____

Address: _____

City/Town: _____

State: _____ Zip: _____ Country _____

Phone: _____ Fax: _____

Brand of UPS used? _____ # _____

Brand of PCs used? _____ # _____

Brand of Servers used? _____ # _____

ack-UPS® Office™'s instant ttery back-up can keep you and running even when the wer goes down."

APC®

P3-BO

(888) 289-APCC x8239
Fax: (401) 788-2797
http://www.apcc.com

© 1997 American Power Conversion. All Rights Reserved. All trademarks are property of their owners. Specifications subject to change without notice. BF20ES

OMPUTER DISCOUNT WAREHOUSE™
800-334-4239

GLOBAL® COMPUTER SUPPLIES
800-845-6225

Circle 45 on reader service card

Sony's Budget Portable LCD Projector

PRESENTATIONS

IF YOU DO small-group presentations on the road, Sony's **CPJ-D500** portable projector may be just what you need. Instead of huddling around a notebook, your audience can sit comfortably and even take notes while viewing a much larger projected image (from 2 to 5 feet diagonal). This $1999 device won't replace boardroom or conference hall LCD projectors that cost three times as much, but it's a welcome option for groups of four to six people.

SONY'S $1999 CPJ-D500 is the cheapest portable LCD projector on the market.

The CPJ-D500 is compact (4 by 8 by 12 inches), lightweight (8.3 pounds), and easy to use. It accepts video (RGB, composite video, S-Video) and stereo-audio input. For sound, you can either use the built-in speaker or connect the unit to external speakers (not supplied). Equipped with an f1.8 lens, an internal 1.3-inch LCD panel, and an 80-watt metal-halide lamp, the shipping unit I tested performed fine in a room lit well enough for viewers seated 3 to 8 feet from the projected image to take notes.

The CPJ-D500's biggest limitation: It projects only 640 by 480 (VGA) resolution. It doesn't accept 1024 by 768 input at all, and 800 by 600 images are compressed to VGA resolution, which often impairs text legibility. There's no zoom lens or remote control, both common in costlier LCD projectors.

Nonetheless, the CPJ-D500 may be worthwhile for many on-the-go presenters. It's the first and only LCD projector designed specifically for small groups, and it's so inexpensive that a company could buy three units for roughly the price of the next cheapest LCD projector on the market.

—*Richard Jantz*

Sony CPJ-D500

PRO: Affordable LCD projector; ultraportable; accepts PC, video, and audio input.

CON: Projects VGA resolution only, no zoom lens or remote control.

VALUE: Good for presentations to small groups.

Sony Electronics Inc.
800/352-7669
www.sony.com/technology
Street price: $1999
READER SERVICE NO. 770

QUICK TAKES

Sling Along

DOES YOUR notebook carrying case protect your machine or just cover it up? Insurance companies say more than 1000 portable PCs are broken in transit daily—almost all of them in foam-padded cases. Luggage manufacturer Tumi's Safecase includes Port's Safeport, a suspended neoprene sling that lets the notebook bounce rather than crash to the bottom of the case. The Safecase has been proved effective to drops of 2.5 feet; most padded luggage can handle only half-foot drops. Available in ballistic nylon or leather, the Safecase comes in 12 styles costing $250 to $550; deluxe versions offer zippered expansion slots roomy enough for an overnight wardrobe, and a rear accordion file. Tumi; 800/322-8864.

READER SERVICE NO. 771

—*Michael S. Lasky*

Number Nine's Graphics Revolution

GRAPHICS CARD

NUMBER NINE'S high-powered Imagine 128 graphics accelerator has been eclipsed by a faster, more affordable successor—the aptly named **Revolution 3D.** Based on what the company calls its Ticket to Ride coprocessor, the Revolution 3D provides the kinds of 3D features you see on gaming cards, along with Number Nine's 128-bit acceleration—which is nimble with high-resolution 2D graphics and video. The $299 price tag may be lofty for a card with 4MB of WRAM, but it's nowhere near the $500 shockers we've seen regularly in the Imagine 128 line. If you work with professional graphics programs or dabble in 3D modeling, the price is right.

At the PC World Test Center, an early version of the Revolution 3D outperformed all other tested boards at speeding up 2D programs. In addition, the board played full-screen MPEG video clips at high resolutions flawlessly.

However, 3D performance was mixed. The Revolution 3D ran the Monster Truck Madness game as well as any board we've seen. But it had trouble performing alpha blending operations in Independence Day (for an explanation of 3D tests and features, see "2D and 3D Graphics Boards: You Can't Always Get What You Want"). We've encountered a similar problem with several other boards and expect it to be fixed when the drivers are finalized.

Ultimately, though, you wouldn't buy the Revolution 3D just for games; better game cards can be had for less money. Although the board can handle any chore, it sets itself apart in graphically intense applications.

—*Brad Grimes* ▶

Number Nine Revolution 3D

PRO: Fast at high resolutions, great video playback.

CON: Pricey for regular business programs or games.

VALUE: Excellent choice for desktop publishing or other high-end graphics.

Number Nine
800/438-6463
www.nine.com
Street price: $299
READER SERVICE NO. 772

FOR ONCE THE NAME BRAND COSTS LESS THAN THE GENERICS.

JEEP® CHEROKEE

Aspirin, toothpaste, sandwich bags. When you're at the local supermarket, it might not matter whether or not you buy name-brand or generic items. But when you're on a trek through Alaska, you can bet you are going to need the one name that stands above all others. Jeep.

With more than half a century of off-road adventure, Jeep vehicles dominate the lands less traveled. And Cherokee is certainly no exception, offering an advanced Quadra-Link® suspension and a choice of two different four-wheel drive systems. Command-Trac®, a system with the convenience of shift-on-the-fly, and Selec-Trac®, a full-time four-wheel drive system. Amazing capability for such a modest price tag.

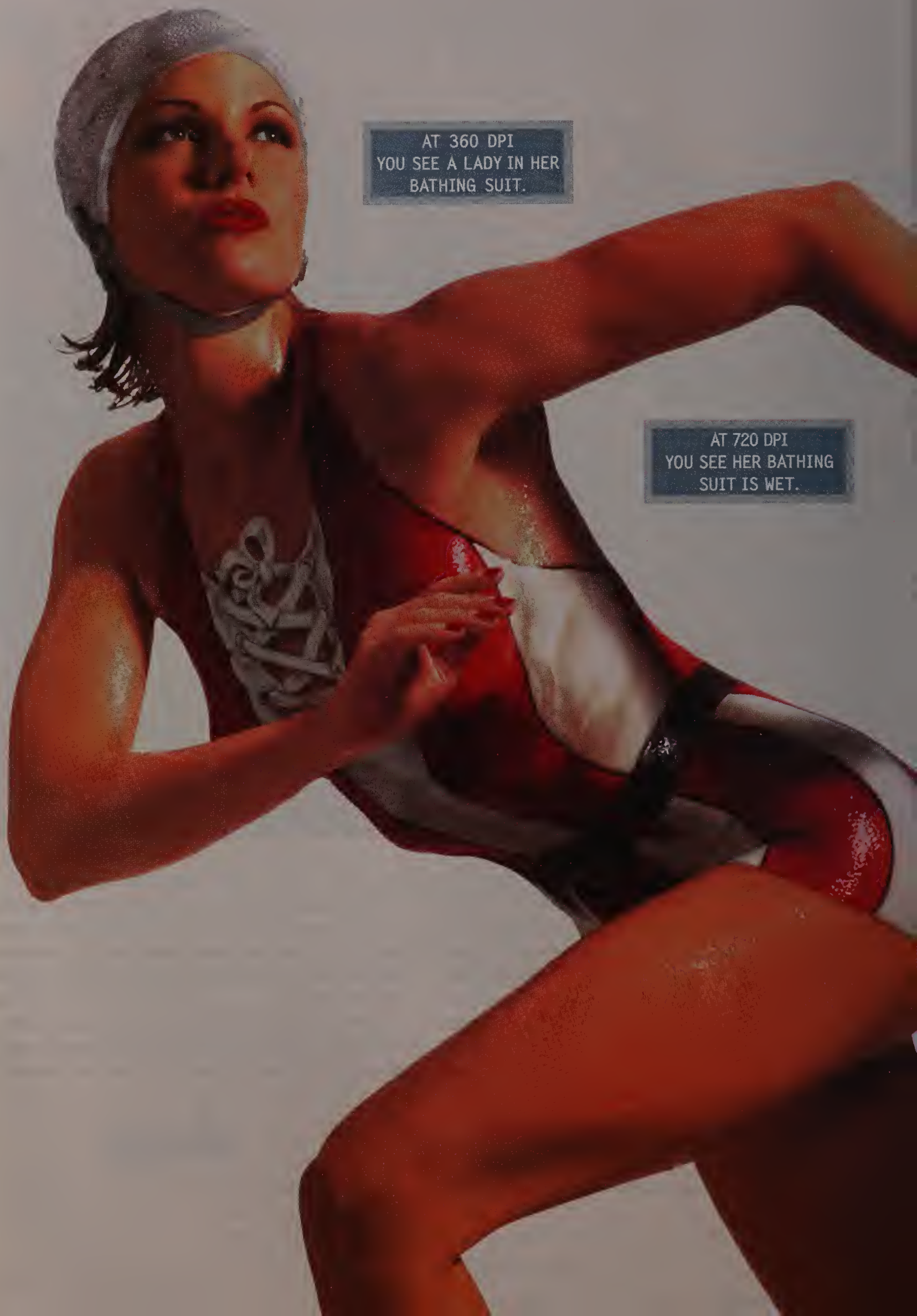
So when the time comes for you to choose a 4x4, don't settle for anything less than the original—Jeep. Otherwise, you might want to get some of that name-brand aspirin.

For more information about Jeep Cherokee, call us at 1-800-925-JEEP or visit our Web site at www.jeep.com After all, who wants to be in the wild with a generic?

Jeep®

THERE'S ONLY ONE

Always use seat belts. Remember, a backseat is the safest place for children. Jeep is a registered trademark of Chrysler Corporation.



Maximum engine rated speed is 8 PPM in economy mode. Actual print speeds vary depending on system configuration, software application, page complexity, amount of page covered and print settings. Prices may vary. EPSON and EPSON Stylus are registered trademarks of Seiko Epson Corp. Micro Piezo is a trademark of Epson America, Inc. © 1997 Epson America, Inc.

YOU'VE GOT TO SEE IT IN EPSON COLOR.

AT 1440 DPI
YOU SEE HER BATHING
SUIT IS PAINTED ON.

An amazing paint job makes you think it's a bathing suit. These astonishing new printers let you know it's not. 1440 x 720 dpi. Photo Quality color. Laser-sharp black text. All from our exclusive Micro Piezo™ Technology—for a smaller, more consistent dot. You'll get print quality that's already won 33 major awards, including PC Computing's 5 Star Rating. In standard format or wide format. PC/Mac compatibility. Optional internal Ethernet. Up to 8 ppm black/7 ppm color on the Epson Stylus® Color 800. Plus a 2-year warranty. Call 1-800-GO-EPSON (ask for operator 3064) or visit us at www.epson.com for more details. For every detail, look at the output.

INTRODUCING THE WORLD'S FIRST 1440 DPI COLOR INK JET PRINTERS.

EPSON Stylus Color 800 about $449. High-performance business printer.

EPSON Stylus Color 1520 about $799. The versatile wide format printer.

Circle 95 on reader service card

QuarkXPress 4.0: Welcome Upgrade

DESKTOP PUBLISHING

QUARKXPRESS HAS long been favored by graphics pros who create short, design-intensive publications, but Quark's flagship product has not had a full upgrade in years. In the meantime, arch-rival Adobe PageMaker (now on version 6.5) has pulled ahead with significantly improved layout, color printing, and electronic publishing features. The big question about **QuarkXPress 4.0** for Windows 95 and NT (and the Mac) is whether it has the right stuff to attract new users or woo die-hard PageMaker fans.

The beta I reviewed (the shipping version is due by the end of the year) showed that QuarkXPress has caught up with PageMaker in several areas, including layout and color printing, and it's bound to retain its status as the professional designer's darling. But it still lacks built-in electronic publishing features that PageMaker provides, such as the ability to produce HTML pages with hyperlinks. Astrobyte makes an Xtension (a third-party add-on for QuarkXPress) that does this for the Macintosh version; its Windows counterpart should be out by the time you read this and will likely cost about $495.

GRAPHICS GALORE: QuarkXPress 4.0's built-in Bézier tools and other new graphics features make it a designer's delight.

QuarkXPress 4.0 is the first 32-bit version of the program; Windows 3.*x* is no longer supported. The interface has been enhanced with pop-up tools, tabbed dialog boxes, and right-click shortcuts. For example, you can now right-click a picture or text box and quickly access a single dialog box to modify the element's position, size, angle, frame, runaround features, and more. You can also click an Apply button to try things out before proceeding—a real plus for beginners, since the Edit menu's Undo command applies only to the last discrete change.

Among the program's most dramatic new features are Bézier-based tools that can be used to create complex drawings and effects that used to require a separate graphics package such as Macromedia Freehand or Adobe Photoshop. Other graphics goodies include sophisticated merge and split commands (for combining or separating multiple shapes), eye-catching text paths, and a Text to Box command that converts characters into Bézier-outline boxes (to create, for instance, display type filled with an image).

FILL 'ER UP: A new Text to Box command lets you convert display type into boxes, which can then be filled with images.

Business users haven't been forgotten. Long-document features that used to require an Xtension—table of contents and index generation, combining several QuarkXPress files into one document—are now built into the program. Other welcome additions include an enhanced Find and Change function, a print style manager (for using different printer descriptions), and character-based style sheets that make it a snap to format a single character, such as a fancy drop cap to start a story or a paragraph.

QuarkXPress 4.0 uses a different file format from its 3.3*x* predecessor, but you can save 4.0 files as 3.3*x* files. (Elements created with new 4.0 features will be modified so the document looks as much like the 4.0 version as possible.) Files created in Windows and Mac versions of QuarkXPress 4.0 can be opened on either platform.

All in all, however, this program lacks the knockout punch needed to topple PageMaker as the desktop publishing favorite for general users, particularly given PageMaker's lower price ($895 compared to $995) and built-in electronic publishing tools. But for designers and graphics pros, this is a must-have upgrade.

—Richard Jantz ▶

QuarkXPress 4.0

PRO: 32-bit version, Bézier-based drawing tools, improved long-document support, character-based styles.

CON: Expensive, requires add-ons for Web publishing tools.

VALUE: Still the program to beat for designers and graphics pros.

Quark Inc.
303/364-5735
www.quark.com
List price: $995 (upgrade price not available at press time)

READER SERVICE NO. 773

Get there faster with the Hayes™ ACCURA™ 56K modem– blazing speed, optimum connectivity and Hayes reliability.

Green light your need for speed with a Hayes ACCURA 56K modem. It offers the unparalleled speed and connectivity of K56flex, the leading protocol developed by Rockwell International and Lucent Technologies. Best yet, all Hayes modems are backed by legendary Hayes reliability...further assuring you of a flawless entry into the fast lane.

K56flex connectivity is now available from a host of Internet Service Providers, including:

America Online · CSi · EarthLink Network · MindSpring · SPRYNET · prodigy internet make it yours.

For a listing of K56flex Internet providers, see our website at www.hayes.com

Or call 1.800.374.8388, ext. 421.

K56 FLEX · Connect with Rockwell

Hayes™

How fast do you want to get there?™

Attention: Actual telephone throughput will depend on telephone line conditions. Call Hayes Online: 770-446-6336. Hayes Worldwide Web Site: http://www.hayes.com or Telnet to "hayes.com". © 1997 Hayes Microcomputer Products, Inc., P.O. Box 105203, Atlanta, GA 30348. Hayes, the Hayes logo, ACCURA and "How fast do you want to get there?" are trademarks or registered trademarks of Hayes Microcomputer Products, Inc. K56flex is a trademark of Lucent Technologies and Rockwell International. All other marks and logos are trademarks of their respective companies.

Circle 97 on reader service card

IBM Business Partner™

* While supplies last and by returning your registration. IBM, Business Partner and Solutions for a small planet are trademarks of International Business Mac

the "our finance department deals with all the paperwork. Unfortunately the finance department is also me" solution

The IBM No More Paperwork Solutions.

Nobody sets up a business because they like doing paperwork. All too often being your own boss means long hours spent shuffling forms instead of chasing dreams.

IBM accounting solutions can automate tasks from accounts receivable and payable to inventory management. The result? A clear picture of your overall cash flow and improved cash management. And they run on the most popular operating systems out there. So you can get down to business, without disrupting business. We can also help finance your acquisition with flexible and attractive leases.

Buy any IBM accounting solution and get a Dun & Bradstreet "Business Solution in a Box™"(a $2,500 value, absolutely free).*

Call IBM at 1 888 IBM-5800 and we'll send you a free "Guide to Doing Business on the Internet." We'll also put you in touch with an IBM Business Partner,™ an independent expert who can provide you with accounting solutions best suited to your business. For more information, visit us at www.businesscenter.ibm.com

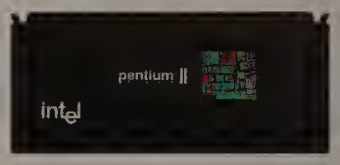
Solutions for a small planet™

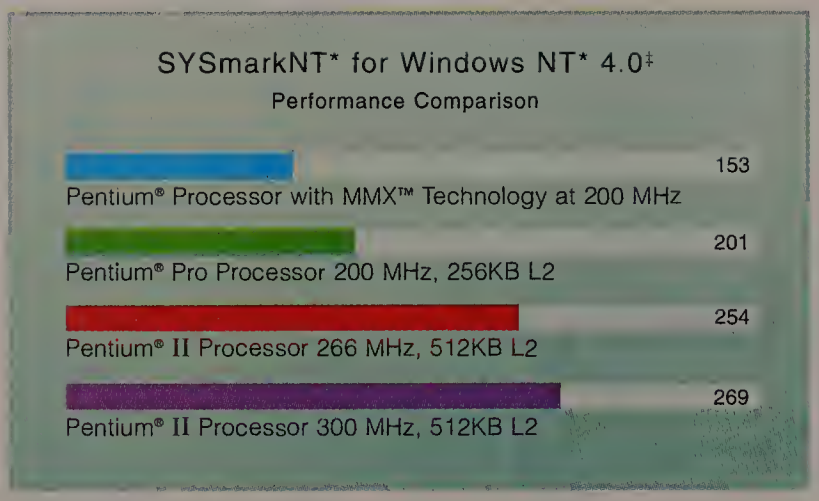
ation in the United States and/or other countries. Business Solution in a Box is a trademark of the Dun & Bradstreet Corporation. © 1997 IBM Corp. All rights reserved.

Made for each other.

The new Intel Pentium® II processor.

One processor was designed with your business software in mind. The new Pentium® II processor. It's the most powerful Intel processor available today. Which means greater performance from your traditional business applications. And the headroom for new applications, like those based on Java.*† Its sleek new package incorporates Intel's unique Dual Independent Bus architecture, an advanced design that uses two separate buses—one linked to the L2 cache and the other dedicated to the main memory. The result is a boost in overall performance that allows you and your company to get more done. The Pentium II processor. Power that's made for today's business software. To learn more, visit our Web site.





► www.intel.com/PentiumII

intel®
The Computer Inside.™

© 1997 Intel Corporation. *Third-party trademarks are property of their respective owners. †As compared to Pentium® processors without Intel MMX™ technology. ‡As compared to Pentium processor-based systems without Dual Independent Bus architecture as measured by the SYSmarkNT for Windows NT 4.0 Performance Comparison (benchmark was run without the benefits of Intel MMX technology code). Performance tests and ratings are measured using specific computer systems. Any difference in system hardware or software design or configuration may affect actual performance.

ModaCAD
Excel 97
webtheater 2
CORELDRAW 7
Productivity, Power and Precision
Adobe PageMaker
InDX
CosmoPlayer 2.0
Word Pro
Word 97
PowerPoint 97
SUPERCEDE

© 1997 Seiko Instruments USA Inc. offer may expire at any time.

I'm Single.

Printing single labels with the Smart Label Printer® is more attractive than wasting time and money with pages of laser labels. Check it out. Every 1000th visitor to our website gets a single Smart Label Printer, free.

www.seikosmart.com/yourslp

Call 1-800-643-0145 Ext. 434 for details.

Circle 188 on reader service card

CD-ROM Audio Dictionary

C D - R O M

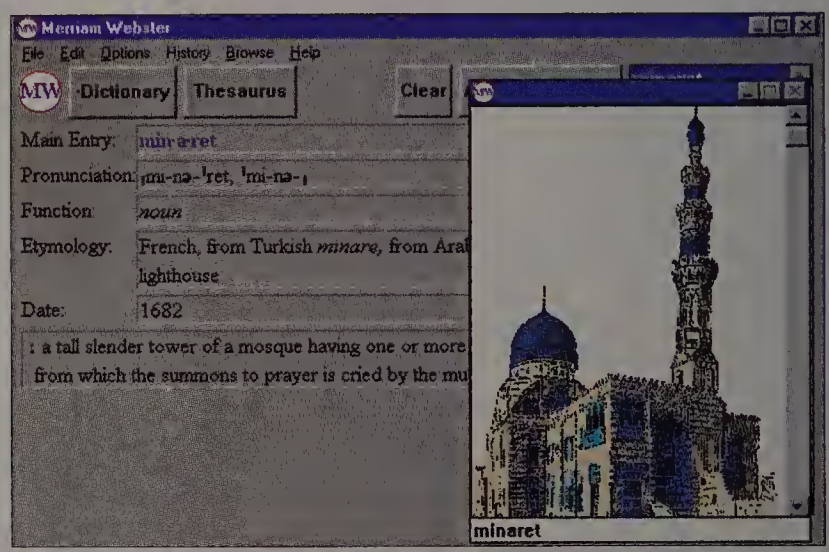
Merriam-Webster's Collegiate Dictionary Deluxe Audio Edition. Figures—let dictionary people name their product, and they deliver 20 syllables.

Luckily, the name is the only unwieldy element of this excellent $40 CD-ROM dictionary. In addition to the 160,000-entry Collegiate Dictionary, you get Merriam-Webster's Collegiate Thesaurus, audio pronunciations of more than 100,000 words, and photos and illustrations.

The M-W Link program lets you highlight a word in any other Windows application—a word processor or e-mail program, for example—and launch the dictionary (or thesaurus) with a customizable keystroke command. This brings up a window with the definition, pronunciation, and etymology, or, for the thesaurus, a list of synonyms. Click on the entry to hear the recorded pronunciation, including variants. The program also has 21 different options for looking up words, including by part of speech, language of origin, or pronunciation via a rhyming dictionary. You'll need 2MB to 40MB hard disk space; the more you install, the faster it runs.

If you're willing to trade a thesaurus and some search options for a much larger audio dictionary, check out the similarly priced Random House Webster's Unabridged Dictionary, which boasts 315,000 written entries and 120,000-plus pronunciations. Or, for an occasional definition, bookmark Merriam-Webster's Web site (www.m-w.com/dictionary).

—*Glenn McDonald* ▶



MERRIAM-WEBSTER'S NEW CD-ROM dictionary provides audio pronunciations for more than 100,000 words.

Merriam-Webster's Collegiate Dictionary Deluxe Audio Edition

PRO: Speedy, includes thesaurus, sophisticated search options.

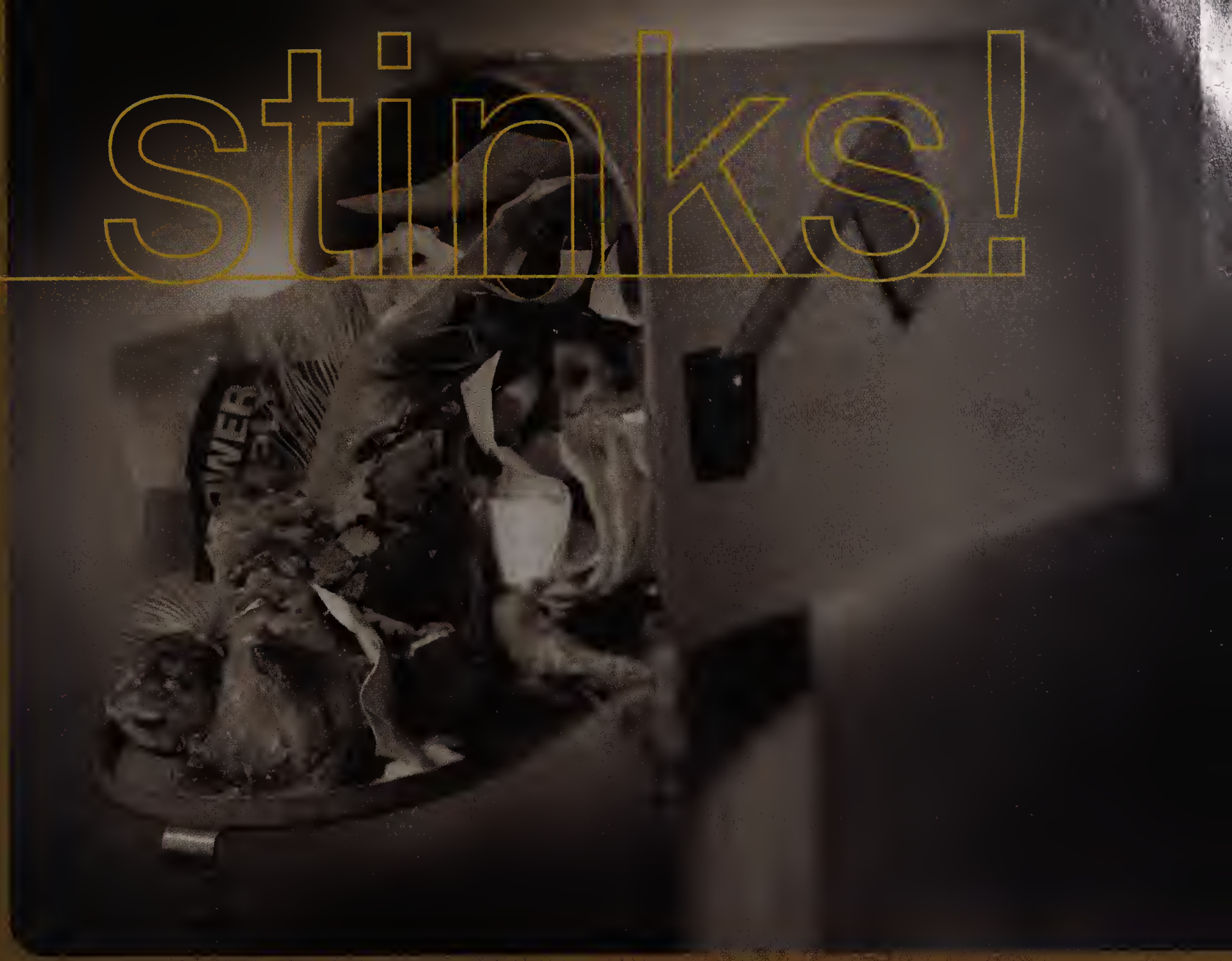
CON: Fewer entries than Random House's dictionary.

VALUE: A must for heavy-duty wordsmiths.

Merriam-Webster
800/201-5029
www.m-w.com
Street price: $40

READER SERVICE NO. 780

nis stinks!



So why is this OK when it's e-mail?

If the Post Office treated your mail like garbage, you'd be outraged. So why put up with it from your e-mail program? Now there's a way to make sure you're never ever left staring at garbage text instead of an e-mail attachment. It's a hot new clean up program called **e-ttachment Opener™**.
From DataViz, the file compatibility specialists.

This nifty utility solves all your problems receiving and reading e-mail file attachments. **e-ttachment Opener** will find the file within the garbage text and turn it back into exactly what you were supposed to receive. Whether that file was sent to you in BinHex, uuEncode or MIME formats. **e-ttachment Opener** also lets you view and print virtually any graphics, word processing, spreadsheet or database file. Even without the application that created it. Or extract almost any compressed file created in Zip, Gzip, z or tar.

If you need even more help handling foreign file formats, DataViz delivers again. Even after **e-ttachment Opener** has turned garbage back into a readable file, you may not have an application that can open it. Our *Conversions Plus®* program converts hundreds of different file formats between PC applications or Macintosh and PC applications. Quickly and accurately. It contains all the features of **e-ttachment Opener** plus over 1,000 file translation combinations. It also contains our *MacOpener®* utility, which is the perfect solution for reading and writing Macintosh disks on your PC.

For more information about our products, call DataViz at **1-800-270-0030 Ext.102**
or visit us on the web at http://www.dataviz.com/eto6.
It's the quickest way to cut down on your junk mail. Runs on Windows 95 and Windows NT

TACHMENT OPENER

DATAVIZ

Available at these locations: COMPUSA EGGHEAD SOFTWARE

Circle 81 on reader service card

oduct names are trademarks of their respective holders

PhotoDeluxe 2.0: Quick, Easy Photo Editing

IMAGE EDITING

IT DOESN'T TAKE much time or talent to create cool digital photos for brochures, newsletters, or Web pages with **PhotoDeluxe 2.0,** an impressive $49 sequel to Adobe Systems' popular program. A polished interface and several new tools and special effects make this a worthwhile upgrade for current users, and a stronger competitor to Microsoft Picture It and other low-cost photo editors.

Like its predecessor, PhotoDeluxe 2.0 provides step-by-step, wizardlike procedures that simplify common photo touch-up tasks (such as removing scratches) and make it easier to add special effects (curling pages, changing backgrounds, and many more). The most impressive new features include automated red-eye removal; a clone tool for duplicating photo elements; and SmartSelect, which automatically outlines objects—a godsend for creating collages. Older tools are also easier to use: A new toolbar above each photo window affords faster access to zoom, delete, text, undo, and other commands.

I would have liked the production version I checked out even more if it had offered a multistep undo command (rather than one-step undo) for trying out different editing and effects combinations. I also wish you could reduce or hide the on-screen menu panels to make more screen room, thereby eliminating some of the scrolling and zooming that the limited work space necessitates.

But all in all, PhotoDeluxe 2.0 is one of the best entry-level photo editors available, combining practical tools and jazzy special effects.

—*Richard Jantz*

PHOTO EDITING BY THE NUMBERS: Step-by-step guides in Adobe's $49 PhotoDeluxe 2.0 make creating photo collages easy.

PhotoDeluxe 2.0

PRO: Easy step-by-step guides, cool special effects, low price.

CON: Lacks multistep undo; limited work space.

VALUE: Great choice for photo editing neophytes.

Adobe Systems Inc.
800/888-6293
www.adobe.com
Street price: $49, upgrade $39

READER SERVICE NO. 778

Paradox 8: A Perfect Fit for WordPerfect Suite

DATABASE

WITH THE RELEASE of **Paradox 8,** Corel's database workhorse finally becomes a full-fledged member of Corel's business application suite.

While Paradox 7 was part of Corel Office Professional 7, it was not integrated with the other applications. Now, however, users of WordPerfect Suite 8 Professional (the successor to Corel Office Professional) can launch WordPerfect and Quattro Pro documents from within Paradox. Merging Paradox data into WordPerfect documents and Quattro Pro spreadsheets has also been simplified. The standard edition of WordPerfect Suite still does not include a database program, but if you buy Paradox 8 separately, the integration benefits still apply.

Corel has added new Experts (guides like Microsoft's wizards that walk you through various tasks) to make Paradox easier for all levels of users. However, like Microsoft's Access 97, this is a big program that takes some time to learn; novices may find it intimidating. New features that bring Paradox more into line with Access 97 include an Expert that helps with design tasks such as changing field colors and borders, Experts for publishing database information to the Web and documenting databases, and 20 additional built-in styles for forms and reports. Paradox 8 also lets you use data from Microsoft Access directly.

Paradox programmers looking for high-end tools should be pleased with the Enterprise edition, slated for fall release. It includes a regular $299 Runtime version (which in turn has a Java Runtime version that lets you run Paradox apps from different platforms, including Windows 3.*x* and 95, Macintosh, DOS, and UNIX) and the Peer Direct Database Replication tool for client-server applications.

In the past, WordPerfect Suite users had to think long and hard about their database choice. With the release of Paradox 8, there's no reason to stray from the suite.

—*Celeste Robinson*

For more information about a product, contact the manufacturer or circle the number on the reader service card. ■

Paradox 8

PRO: Good integration with other WordPerfect Suite applications.

CON: Interface is confusing in some places; not for all novices.

VALUE: Solid choice for WordPerfect Suite users.

Corel
800/772-6735
www.corel.com
Street price: $129, Enterprise edition $1995, Runtime edition $299

READER SERVICE NO. 777

Is lack of support ending your infatuation with your current P.C.?

Here's 3 more re

Imagine! A value-packed, award-winning multimedia system at an unmatched price!

Quantex leads the pack when it comes to offering the newest technology at a price that is never out of reach. We have done it again with our QP6/266 M-4x for under $2500. That's right! For only $2499 you can own this fully loaded machine, complete with 266 MHz Pentium® II processor, Intel 440LX chipset, a 17" digital monitor, AGP graphics card, a huge 5GB hard drive loaded with our impressive software bundle and much, much more. Quantex, redefining value once again.

QP6/266 M-4x $2499
(featuring Pentium® II processor)

Business lease: $87/Mo.

- 266MHz Pentium® II Processor
- Intel 440LX PCI Chipset
- 64MB SDRAM Memory /512KB Secondary Cache
- 5.1GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB AGP Graphics Card w/4MB
- 17" Digital Monitor (16.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- 24X Max EIDE CD-ROM Drive
- Ensoniq 32-bit Wavetable Sound Card
- Altec Lansing ACS-90 Speakers
- ATX Case
- 104-Key Keyboard with MS PS/2 Mouse
- MS Windows '95 with MS Plus
- Value Multimedia Software Bundle
- 3-year limited warranty, 24-hr./7-day Technical Support

QP6/233 M-4x (featuring Pentium II processor).....$2399
QP6/300 M-4x (featuring Pentium II processor).....$2799

Special Upgrade to 19" monitor for only $249 (for M-4x)

MMX™ intel inside pentium® II processor

Value Multimedia Series

Standard Features ■ 2 Universal Serial Bus (USB) Ports ■ K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone ■ 24X Max EIDE CD-ROM Drive ■ Ensoniq 32-bit Wavetable Sound Card ■ 104-Key Keyboard with MS PS/2 Mouse ■ Mini-Tower Case ■ MS Windows '95 with MS Plus ■ 3-year limited warranty, 24-hr./7-day Technical Support

QP5/166 M-1 $1349
(with MMX™ Technology)

Business lease: $47/Mo.

- 166MHz Pentium® Processor with MMX™ Technology
- 16MB EDO Memory /512KB Pipeline Burst Cache
- 2.1GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB Nitro 3D w/2MB
- Altec Lansing ACS-90 Speakers
- 15" Digital Monitor (14.0" viewable)
- Value Multimedia Software Bundle
- Upgrade M-1 to 32MB EDO and 3.2GB HD for only $100

QP5/200 M-1 (with MMX™ Technology).....$1449
QP5/233 M-1 (with MMX™ Technology).....$1599
QP6/233 M-1x (featuring Pentium II processor)...$1799

QP5/166 M-2 $1649
(with MMX™ Technology)

Business lease: $52/Mo.

- 166MHz Pentium® Processor with MMX™ Technology
- 32MB EDO Memory /512KB Pipeline Burst Cache
- 3.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB Nitro 3D w/4MB
- Altec Lansing ACS-90 Speakers
- 17" Digital Monitor (16.1" viewable)
- Value Multimedia Software Bundle

QP5/200 M-2 (with MMX™ Technology).....$1749
QP5/233 M-2 (with MMX™ Technology).....$1899
QP6/233 M-2x (featuring Pentium II processor)...$2099

QP5/200 M-3 $1899
(with MMX™ Technology)

Business lease: $66/Mo.

- 200MHz Pentium® Processor with MMX™ Technology
- 64MB EDO Memory /512KB Pipeline Burst Cache
- 4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB Nitro 3D w/4MB
- Altec Lansing ACS-45 Speakers with subwoofer
- 17" Digital Monitor (16.1" viewable)
- Value Multimedia Software Bundle

QP5/233 M-3 (with MMX™ Technology).....$2049
QP6/233 M-3x (featuring Pentium II processor).....$2249
QP6/266 M-3x (featuring Pentium II processor).....$2399

SOFTWARE BUNDLE

■ Corel Office Suite ■ MS Money '97 ■ Compton's Interactive Encyclopedia ■ Compton's Interactive World Atlas ■ Key Master Maps ■ Body Works 6.0 ■ American Heritage Talking Dictionary ■ Amazon Trail II ■ Internet the City ■ Compton's Reference Collection ■ Dr. Solomons Anti-Virus ■ Windows 95 with MS Plus ■ One-month trial memberships to AOL, CompuServe and Prodigy

UPGRADE (available with system purchase)

■ Panasonic PD/CD-Rom Drive w/ one 650MB PD cartridge..$ 249 ■ Three(3) Panasonic PD Cartridges ..$99 ■ APC Back UPS Pro 650...$ 285 ■ Microsoft Natural Keyboard (u

easons to love us. And never

The competition can't measure up to our fastest system ever..

Our QP6/300 SM-4x has a mind-boggling 300 MHz Pentium® II Processor, just for starters. And an eye-opening 19" monitor to let you see all this speed in action. We follow this up with a huge 8GB Enhanced IDE hard drive to provide all the space you need. Then throw in Matrox's quickest video card with new AGP technology--the Millennium II with 4 MB of WRAM-- for a combination of speed, power and visual fireworks that can't be beat. All backed by Quantex's award winning service and support, including 24 x 7 tech support from living, breathing experts.

QP6/300 SM-4x *(featuring Pentium® II processor)* **$3399**

Business lease: $111/Mo.

- 300MHz Pentium® II Processor
- Intel 440LX PCI Chipset
- 2 Universal Serial Bus (USB) Ports
- 64MB SDRAM Memory / 512KB Secondary Cache
- 8GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- AGP Matrox Millennium II 3D w/4MB WRAM
- Upgrade to AGP Matrox Millennium II 3D w/8MB WRAM for only $
- 19" Digital Monitor (18.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- 24X Max EIDE CD-RDM Drive
- Ensoniq 32-Bit Wavetable Sound Card
- Altec Lansing ACS-45 Speakers w/subwoofer
- ATX Case
- 104-Key Keyboard With MS IntelliMouse
- MS Windows '95 With MS Plus
- Power Multimedia Software Bundle
- 3-year limited warranty, 24-hr./7-day Technical Support

QP6/233 SM-4x (featuring Pentium II processor) $2999
QP6/266 SM-4x (featuring Pentium II processor) $3149

Special Upgrade to DVD-ROM* & DVD Decoder for only $199 (for SM-4x)

* (upgraded from 24X CD-ROM)

Power Multimedia Series

Standard Features ■ 2 Universal Serial Bus (USB) Ports ■ K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone ■ 24X Max EIDE CD-ROM Drive ■ Ensoniq 32-Bit Wavetable Sound Card ■ 104-Key Keyboard With MS IntelliMouse ■ MS Windows '95 With M ■ Power Multimedia Software Bundle ■ 3-year limited warranty, 24-hr./7-day Technical Support ■ Mid-Tower Case

QP6/233 SM-1x *(featuring Pentium® II processor)* **$1999**

Business lease: $72/Mo.

- 233MHz Pentium® II Processor
- 32MB EDO Memory / 512KB Secondary Cache
- 3.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB Nitro 3D with 4MB
- 15" Digital Monitor (14.0" viewable)
- Altec Lansing ACS-90 Speakers

QP5/200 SM-1 (with MMX™ Technology).... $1699
QP5/233 SM-1 (with MMX™ Technology).... $1799
QP6/266 SM-1x (featuring Pentium II processor) $2149

QP6/233 SM-2x *(featuring Pentium® II processor)* **$2249**

Business lease: $78/Mo.

- 233MHz Pentium® II Processor
- 32MB EDO Memory / 512KB Secondary Cache
- 4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB Nitro 3D with 4MB
- 17" Digital Monitor (16.1" viewable)
- Altec Lansing ACS-90 Speakers
- Upgrade SM-2 to 64MB EDO RAM and 5.1GB HD for only $150

QP5/200 SM-2 (with MMX™ Technology)..... $1899
QP5/233 SM-2 (with MMX™ Technology)..... $2049
QP6/266 SM-2x (featuring Pentium II processor). $2399

QP6/233 SM-3x *(featuring Pentium® II processor)* **$2549**

Business lease: $89/Mo.

- 233MHz Pentium® II Processor
- Intel 440LX PCI Chipset
- 64MB SDRAM Memory / 512KB Secondary Cache
- 6.4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB AGP Graphics Card with 4MB
- 17" Digital Monitor (16.1" viewable)
- Altec Lansing ACS-45 Speakers w/subwoofer

QP6/266 SM-3x (featuring Pentium II processor) $269
QP6/300 SM-3x (featuring Pentium II processor) $299

Software Bundle

■ MS Office '97 SBE ■ MS Money '97 ■ Office Mate ■ Day Planner Pro ■ Power Business Plans ■ Form Designer Pro ■ Project Manager Pro ■ Labels Unlimited ■ Compton's Reference Collection ■ Dr. Solomons Anti-Virus ■ Windows 95 with MS Plus ■ One-month trial memberships to AOL, CompuServe and Prodigy

d (upgrade from 104-keyboard).. $ 39 ■ HP Deskjet 692C Printer (w/photo color kit).... $ 299 ■ HP Laserjet 6L Laser Printer....$ 399

Well here's living proof customers just love Quantex.

Nothing sours a romance with your PC faster than costly repairs and lousy tech support. That's why Quantex builds its PC's to last. But if anything should ever go wrong we make sure you get your PC working again in no time at all. We even provide 24 x 7 tech support from live experts. If you need any proof of this, just check out what a recent survey says about our ability to handle any kind of problem quickly and inexpensively. And think of all the money you'll save on broken glass.

Overall Rankings

PC VENDOR	GRADE
Quantex	Excellent
Dell	
Hewlett-Packard	
IBM	
Compaq	Good
Gateway 2000	
Micron	
NEC	
Acer	Fair
AST	
Toshiba	
AT& T	Poor
Digital	
Packard Bell	

Windows Magazine, 8/97

Solving Problems

VENDOR	DAYS TO RESOLVE PROBLEMS
Quantex	11
IBM	12
Compaq	13
Dell	14
Hewlett-Packard	14
NEC	14
Acer	16
Micron	17
AST	17
AT& T	20
Gateway	21
Digital	27
Packard Bell	27
Toshiba	37

Windows Magazine, 8/97

Would You Buy Again?

VENDOR	% WHO WOULD BUY THE SAME BRAND
Dell	92%
Quantex	91%
Hewlett-Packard	89%
IBM	89%
Micron	81%
Gateway	80%
Acer	74%
AST	74%
NEC	71%
AT& T	69%
Digital	69%
Toshiba	61%
Compaq	58%
Packard Bell	51%

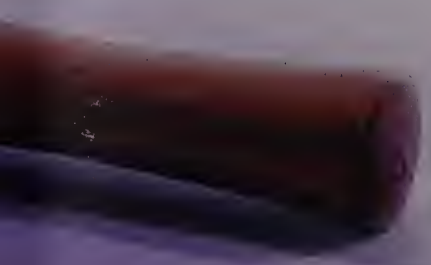
Windows Magazine, 8/97

"Quantex, making its debut in the desktop category, quickly resolves its callers' problems an impressive 47 percent of the time, compared with the survey average of 31 percent."

PC Magazine 7/97

"★★★★" Buy again based on service and support

PC World 6/97



GOOD CHOICE.℠

1.800.896.4898

www.quantex.com

leave us.

ur new notebook. The toughest competition e top-rated notebook's ever had.

E POINT AT WHICH YOUR NOTEBOOK MEETS YOUR DESKTOP.
antex is proud to say that we are one of the last to introduce a notebook.
y? Because, unlike our competition, we waited until we could
nbine Intel Mobile Module Architecture, a 13.3" XGA Active
trix screen and a 3GB removable hard
e with all the latest technologies
maximum versatility and
andability in a notebook.
ridian H Series notebooks: they're
equal of the top performing
ktops and backed with our
laimed 24-hour 7-day live tech
port. For further information
ck out our website:
w.Quantex.com

- 13.3" XGA Active Matrix Display
- New! Intel 430 TX PCI Chipset
- USB and Fast IR Ports
- PCI Bus with 128-Bit Graphics Accelerator
- Intel Mobile Module (IMM) architecture
- 233 MHz Pentium® Processor with MMX™ Technology

Meridian H 1331 $4499

Business lease: $146/Mo.

- 233MHz Pentium® Processor with MMX™ Technology
- Intel Mobile Module Architecture
- 13.3" XGA Active Matrix Display
- 64MB SDRAM(expandable to 144MB) / 512KB Pipelined Burst Cache
- 3GB HD / 3.5" 1.44MB Modular Floppy Drive
- PCMCIA 33.6k Fax/Modem
- 20X Max Modular CD-RDM Drive
- PCI Bus with 128-bit graphics accelerator
- Integrated 16-bit Stereo Sound and Speakers
- Smart Lithium Ion Battery
- USB and Fast IR Ports
- Integrated Personal Touchpad
- MS Windows '95
- MS Dffice '97 SBE
- 24-hr./7-day Technical Support
- 3-year limited warranty on CPU and Main Memory
- 1-year parts and labor limited warranty on all other components

Meridian H Series

Standard Features ■ 3.5" 1.44 Modular Floppy Drive ■ 20X Max Modular CD-RDM Drive ■ PCI Bus w/128-bit graphics accelerator ■ Integrated 16-bit Stereo Sound and Speakers ■ Touchpad ■ Smart Lithium Ion Battery ■ USB and Fast IR Ports

Meridian H 1210 $2999

Business lease: $105/Mo.

- 200MHz Pentium® Processor with MMX™ Technology
- Intel Mobile Module Architecture
- 12.1"SVGA Active Matrix Display
- 16MB SDRAM (expandable to 144MB)/512KB Pipelined Burst Cache
- 1.4GB HD
- Windows 95
- Carrying Case
- 24hr./7-day Technical Support
- 3-year limited warranty on CPU and Main Memory
- 1-year parts and labor limited warranty on all other components

Meridian H 1210(with 166MHz Pentium® Processor with MMX™ Technology) $2799

Meridian H 1211 $3499

Business lease: $114/Mo.

- 233MHz Pentium® Processor with MMX™ Technology
- Intel Mobile Module Architecture
- 12.1" SVGA Active Matrix Display
- 32MB SDRAM (expandable to 144MB)/512KB Pipelined Burst Cache
- 2GB HD
- PCMCIA 33.6K Fax/Modem
- Windows 95
- Carrying Case
- 24-hr./7-day Technical Support
- 3-year limited warranty on CPU and Main Memory
- 1-year parts and labor limited warranty on all other components

Meridian H 1330 $3999

Business lease: $130/Mo.

- 233MHz Pentium® Processor with MMX™ Technology
- Intel Mobile Module Architecture
- 13.3" XGA Active Matrix Display
- 32MB SDRAM (expandable to 144MB)/512KB Pipelined Burst Cache
- 3GB HD
- PCMCIA 33.6K Fax/Modem
- Windows 95
- Carrying Case
- 24-hr./7-day Technical Support
- 3-year limited warranty on CPU and Main Memory
- 1-year parts and labor limited warranty on all other components

SUPPORT POLICY ■ 30-day money back guarantee ■ One-year Parts and Labor limited warranty ■ 3 years limited warranty on CPU and Main Memory ■ 1-year Depot Repair ■ 1-year express Replacement limited warranty ■ 24-hr./7-day Toll Free Technical Support

UPGRADES ■ Mini-Docking Station,,,.$199 ■ 2nd Lithium Ion Battery.....$199 ■ PCMCIA Network Adapter...$129 ■ PCMCIA 33.6k Fax Modem...$129 ■ Deluxe Carrying Case....$99

Why do people love our network-ready workstations?

Total compatibility. And lots more.

Network managers love our Network-Ready Series workstations for many reasons. First, because Quantex WS workstations are 100% Novell® certified and Microsoft NT® certified, so managers are assured of the highest level of network compatibility and performance.

Second, because Quantex network-ready systems are Network-Ready Certified by 3Com. Each is pre-installed, pre-tested and certified to work within their network environment, so managers know that reliable connections are guaranteed.

And third, because Quantex customers always enjoy the piece of mind that comes from knowing not only that Quantex systems are valued packed and competitively priced, but also come with the most reliable support package in the industry.

So relax! With Quantex workstations, reliable, hassle-free connections are guaranteed, so you'll never have to worry about network compatibility again!

QP6/266 WS-3x $2499
(featuring Pentium® II processor)

Business lease: $88/Mo.

- 266MHz Pentium® II Processor
- Intel 440LX PCI Chipset
- 2 Universal Serial Bus (USB) Ports
- 32MB SDRAM Memory / 512KB Secondary Cache
- 5.1GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- STB AGP Graphics Card with 4MB
- 17" Digital Monitor (16.1" viewable)
- 3COM 3c905 PCI 10/100 NIC
- 24X Max EIDE CD-ROM Drive
- ATX Case
- 104-Key Keyboard with MS PS/2 Mouse
- MS Windows NT 4.0 Workstation
- 3-year limited warranty, 24-hr./7-day Technical Support
- Upgrade WS-3x to 64MB SDRAM, 9GB UW SCSI HD and 12x SCSI CD-ROM Drive(incl. UW SCSI Controller)only for only $900

QP6/233 WS-3x(featuring Pentium® II Processor). .$2349
QP6/300 WS-3x(featuring Pentium® II Processor). .$2799

MMX™ intel inside pentium® PROCESSOR

Standard Features ■ STB Nitro3D w/2MB ■ 3COM 3c509 ISA Combo NIC ■ 24X Max EIDE CD-ROM Drive ■ 104-Key Keyboard with MS PS/2 Mouse ■ MS Windows '95 with MS Plus

Network Ready Series

QP5/166 WS-1 $1249
(with MMX™ Technology)

Business lease: $44/Mo.

- 166MHz Pentium® Processor with MMX™ Technology
- 16MB EDO Memory / 512KB Pipeline Burst Cache
- 1.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- 15" Digital Monitor (14.0" viewable)
- Mini-Tower Case
- 2 Universal Serial Bus (USB) Ports
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/200 WS-1(with MMX™Technology).....$1349
QP5/233 WS-1(with MMX™Technology).....$1499

QP5/233 WS-2 $1799
(with MMX™ Technology)

Business lease: $63/Mo.

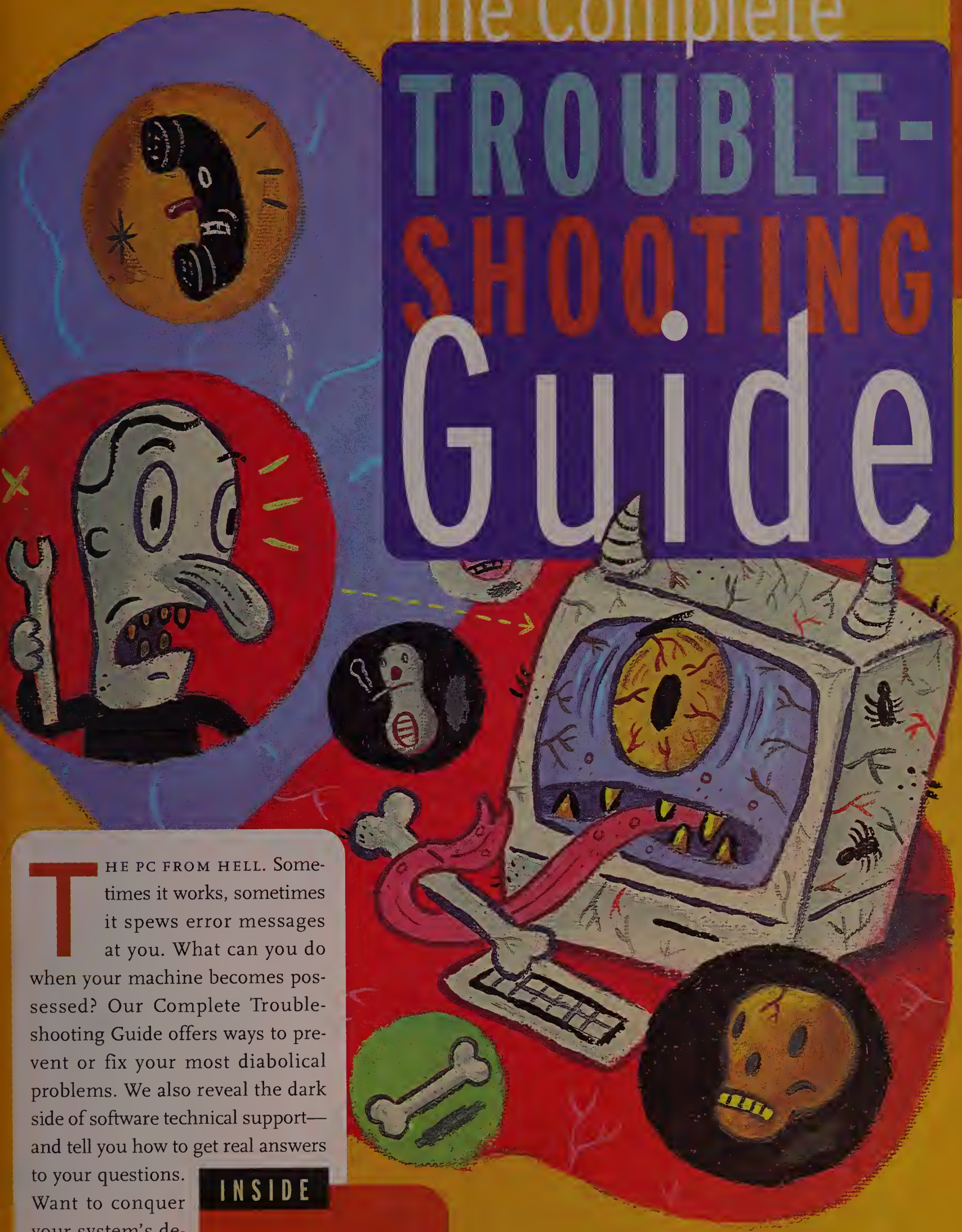
- 233MHz Pentium® Processor with MMX™ Technology
- 32MB EDO Memory / 512KB Pipeline Burst Cache
- 3.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- 17" Digital Monitor (16.1" viewable)
- Mid-Tower Case
- 2 Universal Serial Bus (USB) Ports
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/166 WS-2(with MMX™Technology).....$1599
QP5/200 WS-2(with MMX™Technology).....$1699

QUANTEX
GOOD CHOICE.
1.800.896.489
www.quantex.co

© 1997 Quantex Microsystems, Inc. All Rights Reserved, 400B Pierce Street, Somerset NJ08873 Sales Hours: M-F, 9 a.m. - 12 a.m. (ET) - Sat., 9 a.m. - 6 p.m. All desktop system sales are subject to Quantex's three-year limited warranty and terms and conditions of sale. The three-year limited warranty includes year, parts and labor. Second and third years, parts only warranty. No on-site service is available outside of the continental USA. On-site service is provided at the sole discretion of Quantex. On-site service is provided by an independent third-party provider. For details on our warranty or money-back guarantee or write us. Other peripherals such as printers, joysticks, etc., are covered by manufacturer's warranty. Software titles are subject to change and cannot be substituted. All prices and configurations are subject to change without notice or obligation and do not include shipping or sales tax. All returned items mu have a conspicuous RMA number issued by Quantex and be in original packaging. 30-day money-back policy does not include return freight or original shipping/handling charges. Quantex is not responsible for errors in typography or photography. Pentium, MMX, Intel and the Intel Inside logo are registere trademarks of Intel. Microsoft, and Windows are registered trademarks of Microsoft Corporation. K56flex is a trademark of Lucent Technologies and Rockwell Int'l. All other company trademarks are tradenames of each respective company.

The Complete TROUBLE-SHOOTING Guide



ILLUSTRATIONS BY GARY BAKEMAN

THE PC FROM HELL. Sometimes it works, sometimes it spews error messages at you. What can you do when your machine becomes possessed? Our Complete Troubleshooting Guide offers ways to prevent or fix your most diabolical problems. We also reveal the dark side of software technical support—and tell you how to get real answers to your questions. Want to conquer your system's demons? Read on. ▶

INSIDE

136 How to Keep Your PC Trouble-Free

154 Want Good Tech Support? Good Luck...

BASE
MAN

The best call to tech support is the one you never make. Here's how to crashproof your PC and recover from disaster if it strikes.

TROUBLESHOOTING

BY LINCOLN SPECTOR

HOW TO KEEP YOUR PC Trouble-free

INSIDE

138 Hard Disk Housekeeping
138 Organize Your Data
138 Partition Your Disk
139 Protect Your Assets
139 Text Support

140 The Complete PC Toolbox
140 The Essential Utility Library
141 The Latest, Greatest Software
141 Terrific Shareware Extras
144 Top Ten Bugs (and How to Swat Them)

146 Keep Your PC Safe and Secure
146 Essential #1: A Backup Drive
150 Essential #2: Antivirus Software
150 Essential #3: A Surge Suppressor
150 And the Optional: An Uninterruptible Power Supply
146 Free Support: Usenet to the Rescue

151 Reference Card
151 Your PC Tune-Up Schedule

COMPUTERS ARE EVIL. They make your life easier, they create a dependency, and then—just when you need them most—they eat your data. Or they catch a virus, lose important files, or just plain crash, leaving you looking forward to a long cozy evening on the phone with tech support.

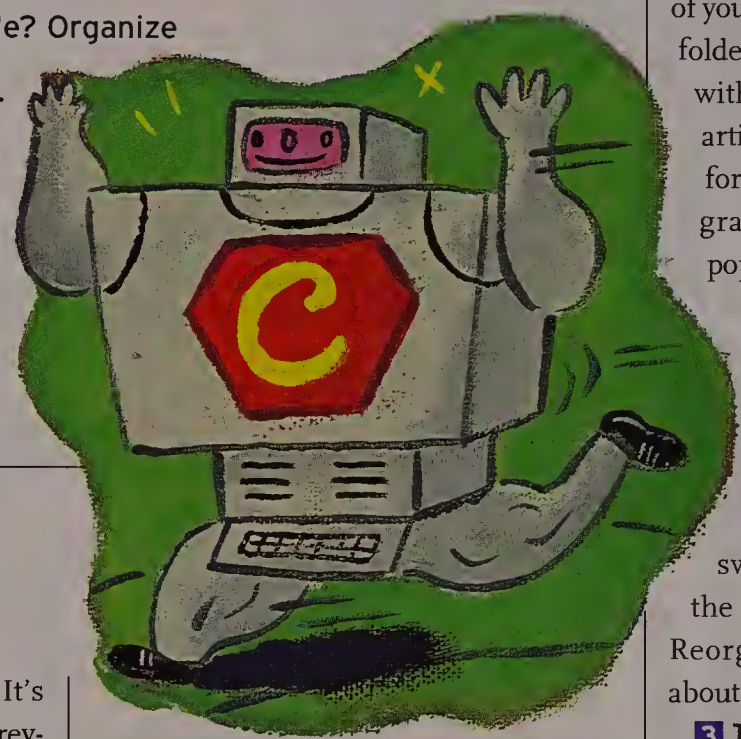
It doesn't have to be this way. Over the years I've learned a few tricks for keeping a PC's more malicious tendencies at bay. I'll show you how to organize your hard drive and keep it running smoothly, how to protect your data, and how to set up a regular schedule of backups and system maintenance. I'll also advise you on the essential software tools for diagnosing and curing a sick PC. You'll learn how to zap the most common bugs, what books to consult to troubleshoot your PC problems, and which newsgroups to check out when you need a second (or hundredth) opinion.

I can't promise that you'll never need to call tech support again, but if you follow the advice here, you'll do it a lot less often. ▶

Hard Disk Housekeeping

BAD THINGS EVENTUALLY happen to every PC. Your power supply could conk out. Your monitor tube might blow. But if your hard disk dies and you're not prepared for it, you could lose months or even years of hard work.

The best way to prevent trouble? Organize your data so it's easy to back up. You'll also need to defrag your files and scan the drive's surface on a regular basis. And you may want to partition the disk to use its space more efficiently.



Organize Your Data

SPECTOR'S RULE Number 1: It's your data. You can put it wherever you want. And the best place to keep the files you've created is in one *master data folder,* with subfolders for files related to individual projects.

That way, if you don't have time to back up your entire hard drive, you can quickly duplicate your most precious files. If you want to take a project home or on the road, you simply copy the contents of a single folder. And if you need to find all the files that contain the name *Irving,* you can search your data folder and its subfolders a lot faster than you can your entire drive.

Here are four quick steps for organizing your hard drive around your work:

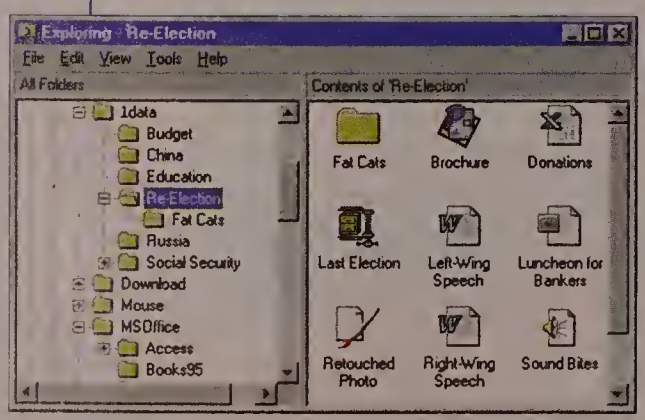
1 Create a master data folder. Start by making a single data folder off your hard drive's root. I call mine Articles, which probably doesn't mean much to you unless you write for magazines. If you call yours 1data, it will appear near the top of your file directory, so you won't have to scroll down to find it.

HOT TIP Microsoft Office 95 and 97 automatically create a folder called C:\My Documents, where they save all your data files. If you change the name of My Documents to 1data (or whatever), Office applications will continue to store all your data files there.

2 Create subfolders and move your files. Of course, storing *all* your data files in one big folder can get pretty unwieldy. Create subfolders within 1data; if you're an accountant, for example, you'd probably want to create a different folder for each of your clients. My Articles folder has subfolders for different issues of *PC World,* with folders inside each for particular articles. I also have separate subfolders for my financial data, my calendar program's files, and of course the ever-popular Miscellaneous.

After you've set up your subfolders, find all your documents, worksheets, address books, and drawings in whatever folders they've been hiding in and drag them to the appropriate subfolders. Don't sweat getting this organization right the first time. You can always redo it. Reorganizing your data subfolders is about a 5-minute job.

3 Tell applications to save files to your new folder. If you used My Documents (or whatever you've chosen to call it) as your master data folder, then Word, Excel, and other Office applications will automatically store files there. But other programs—even other Microsoft applications—don't know about My Documents, so you'll have to tell them about it.



Partition Your Disk

IF YOU HAVE an older PC with a 1GB-plus hard drive, you may be wasting a lot of disk space. Partitioning the drive may let you reclaim a little space, as well as create safe havens for your data or software.

Why partition? Hard drive space is allocated in clusters, the smallest units that Windows can recognize. The FAT16 (File Allocation Table) system used by most Windows PCs can handle a maximum of only 65,536 clusters, which means a 1GB drive has a cluster size of 32K. In other words, even a 180-byte Shortcut file takes up 32K of space.

Most Windows 95 systems shipped this year use FAT32, which can handle more than 4 billion clusters; with FAT32, that same 1GB drive would have a cluster size of only 4K. To find out if your drive is using FAT32, open up *My Computer,* right-click your C: drive, and select *Properties;* on the General tab, the Type will say FAT32. Sorry, but if you want to update an older PC to FAT32 you'll have to wait for Windows 98, due out early next year.

To trim the cluster size on a FAT16 system, you'll need to divide your large hard disk into several smaller drives. If you turn a 1.6GB disk into a 500MB drive C:, a 900MB drive D:, and a 200MB drive E:, the clusters on those logical drives will be 8K, 16K, and 4K, respectively. (See "Wasted Space" for the cluster size of different-size partitions.)

How to do it. If you've got a

Windows 95 offers an easy way to tell most programs where to store data files. But first you'll need to find the application's Shortcut. If you typically launch the program from Windows' Start menu, right-click the *Start* button, select *Open* or *Explore*, and navigate your way to the menu folder containing the Shortcut. Right-click the Shortcut, select *Properties*, click the *Shortcut* tab, and in the 'Start in' field enter the path to your folder—for instance, **c:\1data**. Click *OK*.

If that doesn't work, you'll need to change the program's internal settings for where it stores documents. For instance, with Lotus Word Pro 97, select *File•User Setup•Word Pro Preferences*, click the *Locations* tab, and in the Documents field enter the path to your data folder.

4 Create a Shortcut to your data folder. From an Explorer window, right-click and drag the folder to your desktop. When you drop it, select *Create Shortcut(s) Here*. Double-clicking the folder will open it up in a window. Right-clicking it and selecting *Explore* will open it up in Explorer. You can do the same thing with subfolders. To go to a particular project quickly, create Shortcuts to folders within 1data.

WASTED SPACE

EVERY FILE, no matter how small, consumes at least one hard disk cluster. Larger partitions require larger clusters, which means each file wastes more space. Here are cluster sizes for partitions on a drive formatted with FAT16, the file system used by most Windows 95 PCs.

PARTITION SIZE	CLUSTER SIZE
16MB to 127MB	2K
128MB to 255MB	4K
256MB to 511MB	8K
512MB to 1023MB	16K
1024MB to 2047MB	32K

Protect Your Assets

YOUR HARD DRIVE can be as organized as Martha Stewart's sock drawer, but if you don't maintain it properly, it will still slow to a crawl and perhaps even corrupt your files. To keep that drive running smoothly, you need to regularly defragment the files on it and check the drive itself for errors.

Defrag your files. When Windows stores files, it breaks them into pieces and squirrels them away wherever it finds free space on your drive. This is a more efficient way to store files, but if your disk gets too fragmented, it can really slow down your machine. Even worse, a repair program will have a hard time reconstructing damaged files if the drive is fragmented.

The solution: Defrag your disk every couple of weeks. Windows 95 comes with a serviceable if unspectacular defragmenting utility. From the Start menu, select *Programs•Accessories•System Tools•Disk Defragmenter*. Better defraggers are available in commercial utilities packages (see "The Complete PC Toolbox").

HOT TIP Ignore the "quick defrag" options and pick your defragger's slowest, most complete mode. It takes longer, but you don't have to sit and watch it. Start it when you quit for the night, and it will be done before you return in the morning.

Scan your disk. Bad things can happen to even the best hard drives. Parts of long file names can be orphaned if you use 16-bit applications. The operating system can lose track of files, and wear and tear can render sections of the drive unfit for holding data. A good scanning utility checks for these errors and corrects them. Windows 95 comes with one (from the Start menu, select *Programs•Accessories•System Tools•ScanDisk*), but it's slow and incomplete. You're better off using the scan tool that comes with Norton Utilities or Nuts & Bolts.

HOT TIP Do a quick scan—one without a sector-by-sector check of the drive's surface—every day. But every couple of weeks or so, you should do a more time-consuming full scan of all drive partitions. ▶

new hard drive that contains no data, you can partition it using DOS's fdisk utility. But fdisk wipes out existing data, so if you're already working with your drive, use PowerQuest's PartitionMagic instead—it creates and modifies partitions without destroying any of your data. Partition Magic isn't always intuitive, but it's safer than any alternative I've seen.

When I tried out the lone competing product, Quarterdeck's Partition-It, it conflicted with Western Digital's EZ Drive utility, rendering my drive inaccessible. If I hadn't kept backups, I might still be trying to re-create my lost data. (Quarterdeck is aware of the conflict with EZ Drive but had no solution for it at press time.)

If you do partition, leave room to grow. For instance, if you put Windows in one partition, your apps in another, and your data in a third, leave enough room on the apps partition to install new software.

• **Partition-It** $50 street; Quarterdeck Corp.; 800/683-6696; www.quarterdeck.com

READER SERVICE NO. 747

• **PartitionMagic 3.0** $70 street; PowerQuest Corp.; 801/226-8977, 801/226-8941 (fax); magic@powerquest.com, www.powerquest.com

READER SERVICE NO. 748

TEXT SUPPORT

GOOD HELP is hard to find—especially when choosing a PC reference manual. Here's how to judge a book by more than its cover:

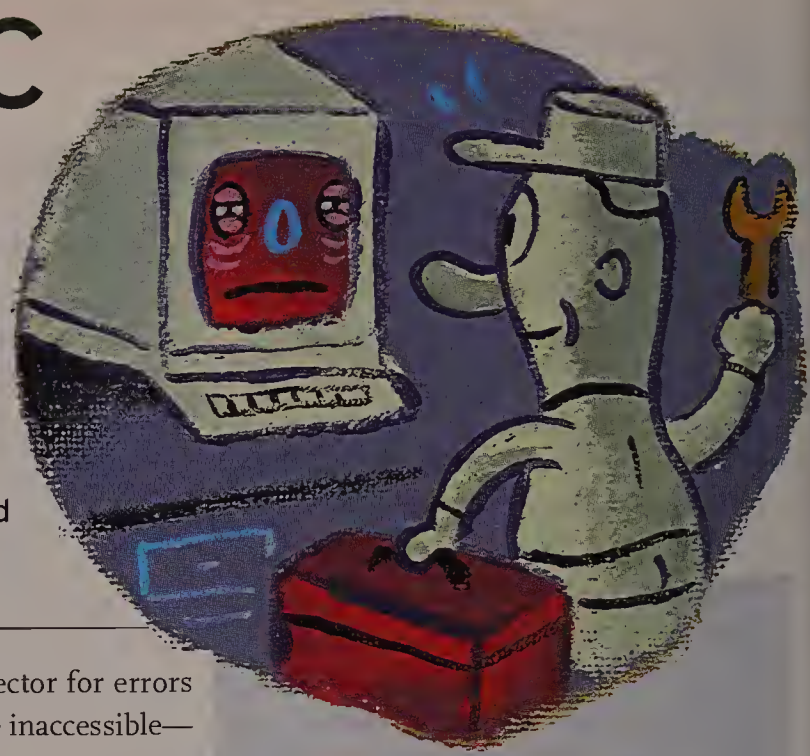
1 Scan the shelves. Go to a store's computer section and choose three books aimed at your general level of expertise.

2 Check the index. Pick three topics and see if they're listed in each book's index. (For example: How do I resolve an IRQ conflict? How do I make an emergency recovery disk? Just what is FAT32 and how does it affect hard drive partitions?)

3 Rate the information. Once you find the answers, see if you understand them. Look for step-by-step instructions and illustrations or photos. If you find yourself scratching your head, move on to the next book.

My favorite PC reference books: *The PC Bible* by Eric Knorr (Peachpit Press, 1996, 800/283-9444, $29.95) and *The PC Upgrade and Repair Bible* by Barry Press (IDG Books, 1997, 800/762-2974, $49.99). *The PC Bible* is excellent for basic troubleshooting issues, while *PC Upgrade* is best for do-it-yourselfers and comes with a CD-ROM full of software. —Michael S. Lasky

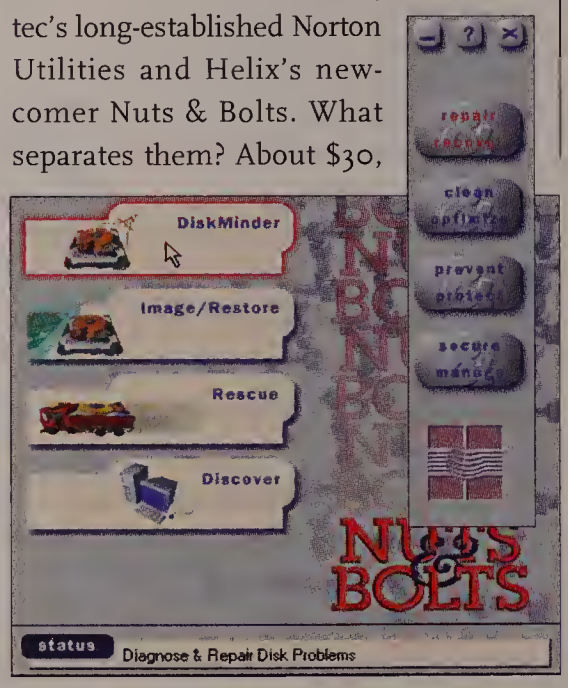
The Complete PC Toolbox



AS ANYONE with a garage workshop knows, free tools are generally worth what you pay for them. So it is with ScanDisk, Disk Defragmenter, the Recycle Bin, and many of the other utilities that come with Windows 95. To keep your PC in prime shape, you'll want to invest in some first-class diagnostic and repair utilities. Here are my picks for the best of the bunch.

The Essential Utility Library

THE FIRST PACKAGE you need is an all-around collection of solid utilities. There are two top-flight candidates for this job: Symantec's long-established Norton Utilities and Helix's newcomer Nuts & Bolts. What separates them? About $30, with Nuts & Bolts being the cheaper of the two. Helix's package also sports a better user interface, with clear dialog boxes and excellent tools (see "Checking Out the Libraries"). If you already own Norton there's no reason to abandon it (I'm a Norton user from way back and I still use it), but Nuts & Bolts is the better buy.



NUTS & BOLTS' centralized user interface helps make it easier to use than Norton Utilities.

Both packages test and fix your hard drive more thoroughly than does Windows' ScanDisk. For instance, they check the partition table and the boot sector for errors that can render your drive inaccessible—things that ScanDisk ignores.

Symantec's and Helix's defraggers are also faster and considerably safer because to avoid errors they compare the file fragments to the originals as they move them. They even defrag Windows' swap file—the chunk of hard drive space that Windows uses when it needs more RAM (in other words, all the time).

They're also true 32-bit programs, while ScanDisk and Disk Defragmenter are old-fashioned, 16-bit tools. A 16-bit program is more prone to crashing, and if there's anything you don't want to crash, it's a disk scanner or defragger.

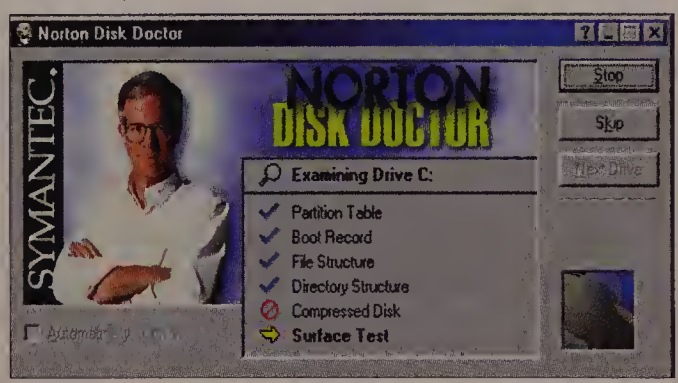
HOT TIP You can have Norton or Nuts & Bolts run in the background, alerting you if your hard drive needs defragging or if any files are cross-linked. My advice: Don't bother. Just remember to defrag or scan the drive every couple of weeks.

• **Norton Utilities 2.0 for Windows 95** $79 street, **Norton AntiVirus** $69 street; Symantec; 800/441-7234; www.symantec.com

READER SERVICE NO. 749

• **Nuts & Bolts** $50 street; Helix Software; 800/451-0551; www.helixsoftware.com

READER SERVICE NO. 750



NORTON DISK DOCTOR gives your hard drive a checkup under the watchful eye of product creator Peter Norton.

CHECKING OUT THE Libraries

Nuts & Bolts offers more for your money, but if you already use Norton, you may not want to switch.

	Norton Utilities	Nuts & Bolts
Street price	$79	$50
Disk scanner		
Checks FAT	●	●
Looks for cross-linked files	●	●
Checks long file names	●	●
Checks boot sector	●	●
Tests CMOS	●	●
Scans disk surface	●	●
Other care and protection		
Disk defragmenter	●	●
Enhanced Recycle Bin	●	●
Monitors system in background	●	●
Makes emergency floppy	●	●
System information	●	●
Crash protection	●	●
Hardware diagnostics	●[1]	●
Automatic updater	●	○
File management		
Cleans drive of unneeded files	●	●
Cleans drive of orphaned Shortcuts	○	●
File compression	○	●
File comparison	●	○
File encryption and decryption	○	●

● = Yes ○ = No

[1] Hardware diagnostics program runs in a DOS window.

The Latest, Greatest Software

APPLICATIONS seem to change by the minute. By the time you install one, there's either a new version or a new patch for the current version. In fact, Windows 98, due out early next year, is expected to come with its own Internet update software. Meanwhile, several software solutions can keep you and your applications up-to-date, but they're not for everyone.

CyberMedia's **Oil Change** scans the Internet and offers you a list of updates to the programs it finds on your system. After you download the update, Oil Change can unpack the compressed file and will even run the install program for you. It also has an undo feature that can (or at least should) uninstall the most recent update you made through it.

Using Oil Change showed me just how out-of-date my programs really were. I found I could install a file conversion wizard for Excel, add a preview pane to Exchange, and install a QuickTime plug-in in Netscape Navigator.

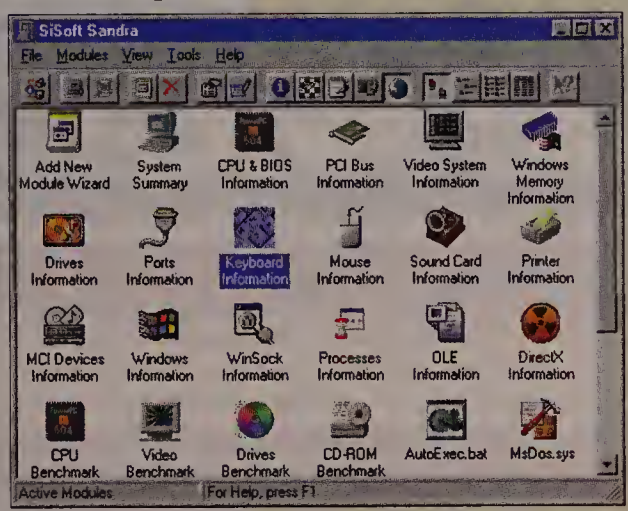
But Oil Change didn't tell me to update Norton AntiVirus, even though I knew that I needed to. Stranger than that, it recommended upgrades to several games I'd never even heard of, and suggested I upgrade America Online from version 2.5 to 3.0 (which I was already using). And when I tried to uninstall Word 97's file compatibility patch, it didn't work. (An upgrade to Oil Change, which features push technology, an expanded knowledgebase, and the ability to schedule nighttime updates, was unavailable for testing at press time. It should be available by the time you read this.)

TuneUp.com (www.tuneup.com) is a Web-based subscription service that can keep your system up-to-date for $3.95 a month. It costs more than Oil Change but includes virus checking, information from a number of sources (including BugNet), and one-on-one technical support by e-mail. Earlier this year Quarterdeck purchased TuneUp.com; a retail version of the Web-based tool, **PCTuneUp**, should be on store shelves by the time you read this. PCTuneUp will also be able to roll back installations, so that if installing the latest Blunderbuss driver renders your laser printer inoperable, you can go back to the driver you were using before.

If you use a lot of shareware, Manageable Software Services offers a free ▶

TERRIFIC Shareware EXTRAS

THERE ARE SOME wonderful little programs that can make it much easier to care for your PC. Better yet, many are no-cost or inexpensive shareware products you can evaluate free of charge. All the programs discussed here are available at www.pcworld.com/files.



IT LOOKS LIKE WINDOWS' Control Panel, but it's really SiSoft Sandra, an inexpensive (and in some cases free) diagnostic program.

Safety Net Pro. Want a quick way to back up your Windows configuration files? Safety Net Pro copies your Registry, .ini files, and other important settings to floppy disk. If disaster strikes, you can restore your custom Windows 95 settings, even if your backup drive doesn't work. $21.95 registration fee; CT Software; 800/617-7740; members.aol.com/ron2222.

RegClean. Windows 95's Registry is like your garage; it stores stuff you don't know what to do with but don't dare throw away. RegClean clears away some of the mess. The program often misses more garbage than it finds, but you can't complain about the price—it's free. See www.microsoft.com/kb/articles/q147/7/69.htm for details.

SiSoft Sandra. Ever wonder how Windows is using all that RAM? Run SiSoft Sandra, a near-complete diagnostic tool with an interface that looks a lot like Windows' Control Panel, to find out. Registration fees vary (the program is free to homes and schools). SiSoft Software Ltd.; C.A.Silasi@city.ac.uk, www.city.ac.uk/~ax515/sandra.html.

Windows 95 Registry FAQ. Designed for moderately technical to advanced users, the FAQ has everything from tips on changing icons to a reference list of binary values. You can even launch Windows' Registry Editor and configuration backup program from the FAQ. A more ambitious shareware version, with information on Microsoft Office, Internet Explorer, and other products, is in the works. Imaginations Unlimited; registryFAQ@imaginations.com, www.imaginations.com.

DiskData. As I write this, my C: drive has 853,478K of actual files, which, thanks to its 16K clusters, is taking up 1,003,248K of disk space. Meanwhile, my Start menu folder has 253K of small Shortcut files that take up 6864K. This info is at my fingertips thanks to DiskData, a handy little program that shows where your hard drive space is going. Informative, easy to use, and free. Can't ask for more than that. Digital Information Gallery; www.digallery.com/diskdata.

ConfigSafe. Want to take a snapshot of your Windows configuration files? Use Artisoft's ConfigSafe. Then, when disaster strikes and Word tells you a .dll file is missing (when it really isn't), you can restore the snapshot and everything should start working again. Even if Windows refuses to load, the program can restore your system from a DOS prompt. The $40 program isn't shareware, but I wish I'd discovered it before I started writing this article. Artisoft; 800/846-9726; www.artisoft.com.

READER SERVICE NO. 751

—Lincoln Spector

DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ◆ Microsoft Windows 95 ◆ Microsoft Mouse (MS IntelliMouse on XPS Systems) ◆ 2 Universal Serial Bus (USB) Ports ◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service ◆
Upgrades: ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $99. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ APC Back-UPS Pro 650, add $299. ◆ 3 yrs. On-site Service, add $99.

***NEW* DELL DIMENSION® XPS D300** 300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY	***NEW* DELL DIMENSION XPS D266** 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D233** 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	**DELL DIMENSION XPS M233s** 233MHz PENTIUM® PROCESSOR **WITH MMX TECHNOLOGY**
Common features listed above plus: • 64MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1200HS Monitor (17.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 128MB SDRAM, add $499.*	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • *NEW* 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.*	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Velocity 4MB AGP Video Card* • AWE64 Value Sound Card • Altec Lansing ACS-90 Speakers ★ *Upgrade to an 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $99.*	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* Matrox Millennium II 4MB WRAM Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.* ★ *Upgrade to a 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*
$3499 **Business Lease◊: $123/Mo.** Order Code #500909	**$2899** **Business Lease: $105/Mo.** Order Code #500908	**$2499** **Business Lease: $90/Mo.** Order Code #500907	**$2199** **Business Lease: $79/Mo.** Order Code #500906

POWERFUL SYSTEMS AT GREAT PRICES.

DELL DIMENSION DESKTOPS FOR HOME

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ *NEW* 56K Capable** U.S. Robotics x2 WinModem ◆ MS Home Essentials plus Best of Entertainment Pack ◆ Microsoft Windows 95 ◆ MS IntelliMouse ◆ 3 Year Limited Warranty with 1 Year On-site Service
Upgrades: ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3-Pak of Zip 100MB Cartridges, add $39. ◆ HP DeskJet 820Cse Color Printer, add $299.

***NEW* DELL DIMENSION XPS D300** 300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D266** 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D233** 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	**DELL DIMENSION XPS M200s** 200MHz PENTIUM PROCESSOR **WITH MMX TECHNOLOGY**
Common features listed above plus: • 64MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1200HS Monitor (17.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • AWE64 Value Sound Card • Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer • Iomega Zip 100MB Internal Drive with One Cartridge	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • *NEW* 1000TX Trinitron Monitor (15.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-290 Speakers with Subwoofer • Iomega Zip 100MB Internal Drive with One Cartridge	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Ultra ATA Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Velocity 4MB AGP Video Card* • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.* ★ *Upgrade to Altec Lansing ACS-290 Speakers with Subwoofer, add $75.* ★ *Upgrade to 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Nitro 4MB EDO PCI Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to a 64MB SDRAM, add $199.* ★ *Upgrade to 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $79.*
$3799 ***NEW* Personal Lease: $169/Mo.°Ø** Order Code #500904	**$2999** ***NEW* Personal Lease: $134/Mo.°Σ** Order Code #500903	**$2399** ***NEW* Personal Lease: $107/Mo.°∞** Order Code #500902	**$1999** ***NEW* Personal Lease: $89/Mo.°π** Order Code #500901

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

‡Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA LP Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ∞ 20X Max/11X Min. Ø12X Max/6X Min. §24 Max./12X Min. **x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ††Advertised configuration varies from tested configuration. ^4MB Baseboard with a 4MB Upgrade Module. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

°Amount of monthly lease payment, based on 24-month lease from Dell Financial Services LP., an independent entity; amount due prior to delivery: Ø$338; Σ$268; ∞$214; π$178 (amounts exclude taxes which may vary; for example, Hartford City, IN fees Ø$8.45); no security deposit required, subject to credit approval and availability. Lease terms subject to change.

DELL DIMENSION M200a
200MHz PENTIUM PROCESSOR
WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 3Com 3C509B EtherLink III 10Mbit ISA Combo Card
- Iomega Zip 100MB Internal Drive with One Cartridge

★ *Upgrade to 32MB SDRAM, add $99.*
★ *Sound Blaster 16 PnP and Altec Lansing ACS-90 Speakers, add $89.*

$1799
Business Lease: $65/Mo.
Order Code #500905

SOFTWARE DESCRIPTIONS

MS Office 97 Small Business Edition (SBE) includes:
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

MS Home Essentials plus Best of Entertainment Pack (available on desktops only) includes:
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0
- TETRIS, Taipei, SkiFree, Dr. BlackJack and more.

DELL POWEREDGE SERVERS

Common features: ◆ 512KB Integrated L2 ECC Cache ◆ Integrated PCI Ultra-Wide SCSI-3 Controller ◆ Intel® Pro/100B PCI Ethernet Adapter ◆ Intel LANDesk® Server Manager v2.5x ◆ **3 Years Next Business Day On-site Service**

DELL® POWEREDGE® 2200 SERVER
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 64MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- MS Windows NT® Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

$4749
Business Lease: $166/Mo.
Order Code #250081

DELL POWEREDGE 2200 SERVER
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- MS Windows NT Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

★ *APC Smart-UPS 700w Power Supply, add $399.*

$3749
Business Lease: $134/Mo.
Order Code #250085

BUY NOW. THANK US LATER.

DELL LATITUDE NOTEBOOKS

Common features: ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts CD-ROM (20X Max°° Variable on LM M166ST or 12X Max^Ω Variable on LM M133ST), 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

DELL LATITUDE® LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 72MB EDO RAM
- *NEW* 4GB Hard Drive
- MS Office 97 Small Business Edition

★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*
★ *3Com Lan+ 33.6 Modem PC Card, add $299.*
★ *Dell Latitude LM Port Replicator, add $159.*

$3999‡
Business Lease: $141/Mo.
Order Code #800168

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB EDO RAM (72MB Max)
- 2.1GB Hard Drive
- Motorola 33.6 Fax Modem
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB EDO RAM, add $299.*
★ *Upgrade to a NEW 4GB Hard Drive, add $349.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*

$3499‡
Business Lease: $123/Mo.
Order Code #800169

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB EDO RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *NEW 56K Capable** x2 Modem, add $149.*
★ *Dell Latitude LM Port Replicator, add $159.*

$2899‡
Business Lease: $105/Mo.
Order Code #800140

***NEW* DELL LATITUDE LM M133ST**
133MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 24MB EDO RAM, add $99.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Nylon Carrying Case, add $69.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *3Com 10Base-T Network Card, add $129.*

$2599‡
Business Lease: $94/Mo.
Order Code #800154

Call for details on Dell's Business Leasing and new Personal Leasing programs.

TO ORDER TOLL-FREE
888-617-9687
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03309

DELL®

update service called **Catch-Up.** Catch-Up doesn't automate the upgrade process and won't update a program you bought in a store, but it does make it easy to check up on and download shareware and freeware programs. If you're using a lot of shareware, it's convenient—at least until you're overwhelmed by all the .zip files and installation programs you find yourself downloading.

If you use a great many programs, automatic update packages are worth your while: Maintaining the latest versions of your core applications should help you avoid bugs and keep your computer running smoothly. But if there are only two or three programs you need to update on a regular basis, these utilities probably aren't worth your time or money.

- **Catch-Up** free; Manage-able Software Services; www.manageable.com
- **Oil Change** first-year subscription $39.95, subsequent years $19.95 each; CyberMedia; 310/581-4700; www.cybermedia.com

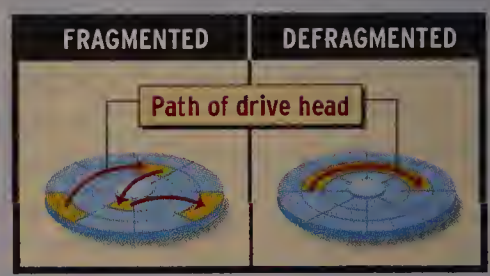
READER SERVICE NO. 752

- **PCTuneUp** $40 street (includes one-year subscription; renewal rates were not yet set at press time); Quarterdeck Corp.; 310/309-3700; www.quarterdeck.com

READER SERVICE NO. 753

DEFRAG YOUR DRIVE

BECAUSE IF YOU DON'T, your drive's read/write head will skip around the disk to pick up stray pieces of a file—slowing down your PC.



File being read Other files

Top Ten Bugs (AND HOW TO SWAT THEM)

1 Netscape Navigator

BUG: Security flaws in Navigator 3.0 and 4.0 can allow hackers to access files on your PC.

FIX: Download Navigator version 3.03 or Communicator version 4.02 from Netscape's Software Download Page (home.netscape.com/comprod/mirror/client_download.html).

2 Internet Explorer

BUG: Potentially dangerous security holes in Explorer 3.0 could let evil Web page authors attack your hard disk.

FIX: Download Internet Explorer 3.02 from www.microsoft.com/msdownload/ieplatform/iewin95/iewin95.asp.

3 Windows 95

BUG: File system problems could endanger your data; also has poor password security.

FIX: Windows 95 Service Pack 1 (found at www.microsoft.com/windows95/info/service-packs.htm) beefs up security but includes a bug of its own that can nuke its ability to save your log-in password. You can get around this bug by deleting your password list file (use *File•Find* and look for and then delete *.pwl), and then grabbing the patch from www.microsoft.com/windows/software/passwd.htm.

4 Microsoft Fax

BUG: You can't use the cover pages in Win 95's Exchange fax program, even though the files are in the Windows directory.

FIX: Don't bother figuring it out; just download the patch from www.microsoft.com/windows/software/coverpg.htm.

5 Quicken

BUG: Quicken's 6.0b update fixed some bugs and introduced a new one: It won't automatically move scheduled transactions from the Reminders window to the register.

FIX: At press time Intuit was still working on a patch. However, you'll find lengthy work-around instructions at www.intuit.com/quicken/technical-support/quicken/releases/qfw6-releases.

6 Cyrix 6x86 CPU

BUG: Early versions of the CPU run slowly under Windows NT. Some programs (particularly games) that require a Pentium may refuse to run.

FIX: Cyrix has an exchange program for NT users with early CPUs (call 800/462-9749). Check out Bryan Davis's 6x86 Web site (www.alternativecpu.com) for links to utilities that fool Win 95 into detecting the 6x86 chip as an Intel Pentium.

7 Microsoft Office 97

BUG: Office 97 data files are often incompatible with those from earlier versions of Office.

FIX: The 8MB Service Release (www.microsoft.com/Office/Office97/ServiceRelease) bears fixes, enhancements, and file converters. Watch out, though—versions downloaded in early August were buggy.

8 Norton Utilities 2.0

BUG: Version 2.0 trips over earlier installations, displays the amount of free disk space incorrectly, leaks memory, and does not completely support FAT32 disk partitions.

FIX: Use Norton's LiveUpdate feature to grab version 2.03, or else download it from service.symantec.com/ftp/nutilftp.html.

9 Tax Software

BUG: Tax software bugs seldom bite hard, but you should always check for fixes before entering data and printing your forms.

FIX: For TurboTax, scout out www.intuit.com/turbotax/. For Block Financial's Kiplinger TaxCut, review www.conductor.com/software/techsupp.htm.

10 Iomega Jaz Disks

BUG: A limited number of Jaz disks manufactured between March 13 and April 20, 1997, are defective and will eventually suffer from performance degradation or fail completely.

FIX: If you have a bad disk, Iomega's customer service department (800/336-1314) will replace it for free. For a complete description of the problem, including how to identify defective disks (the date of manufacture is etched on each), and how to exchange them, read the company's press release about the problem at www.iomega.com/company/news/newsjaz/jazdisk.html. —Scott Spanbauer

©1997 Hummer is a registe[illegible]emark of AM General Corporation. Pontiac [illegible]rebird [illegible]gistered trademarks of General Motors Corporation.

Ever been drenched in sound?

Ever been completely engulfed by a song you love? Isn't it better at 65 miles an hour? We make Monsoon Audio Systems for select new vehicles, like the Hummer and the Pontiac Firebird. Because, no matter what kind of music you listen to, we believe the road is still where that music means the most. And it means more when the system is powerful enough to drench you in sound.

Info: 888-4-atti2D, or on the web at www.monsoonpower.com.

MONSOON

Power. Attitude. Audio.
For the road.

Circle 155 on reader service card.

Keep Your PC Safe and Secure

CALL ME PARANOID, but I believe you should *expect* disaster to strike. If you don't back up your files, monitor viruses, and protect against power dips and surges, you could lose it all. Here are three absolute essentials (and one optional step) that will preserve your data—and maybe your sanity.

ESSENTIAL #1

A Backup Drive

THE MOST IMPORTANT thing you can do to protect your data is to back it up regularly and reliably. Believe me, I know. While working on this article, I managed to render my hard drive completely inaccessible. Fortunately, I had a recent—and complete—backup on tape. Within a couple of hours, I was back to work.

Here are the steps for backup security:

1 Get a tape drive. The easiest backup in the world is one where you click a button and walk away. The cheapest way to do this is to buy a tape backup device with at least the capacity of your hard drive, such as the Iomega Ditto 2GB or the Ditto Easy 3200. (See "Better Safe Than Sorry," February 1997.) Removable-disk units like Iomega's Zip drive just aren't big enough. And don't even think about floppies.

Internal backup drives are $40 to $150 cheaper than external drives but require you to pop the hood and install them; most external drives are slower but simply plug into your PC's parallel port.

2 Test it. Sometimes a tape drive seems to be working fine. Then you try to restore a file (usually the day your big project is due) and realize the drive only *looks* like it's been backing up your files. To protect yourself, back up and restore a few files when you set up the drive's software. You should run this test about once a month.

3 Set up a schedule. Once you've tested the tape drive, do a full backup. Then at the end of every workday, do an incremental backup, which copies only those files that were created or have changed since the last backup. If you're in a hurry, you can speed up this daily process by backing up only your data folder and its subfolders.

Every two weeks, change tapes and do another full backup. With two or three tapes, you'll have a month's worth of data.

4 Store your data off-site. If your computer is stolen or destroyed in a fire, you don't want your data to go with it. Store your backup tapes in a secure place, like a safe-deposit box or a fireproof safe.

HOT TIP For the ultimate in off-site data storage, check out Web-based online backup options, like McAfee's Personal Vault (www.mcafee.com/prod/stormgt/mpv.html) and Atrieva Corporation's Atrieva (www.atrieva.com). With online backup there's no need to buy a backup drive, and no worrying about fire, theft, or flooding. Costs vary, but storage starts at around $10 a month for 25MB of server space. The drawbacks? Using an online backup service can be slow and expensive, depending on how much data you store. You're also dependent on the service's server being accessible at all times. ▶

Free SUPPORT: USENET TO THE RESCUE

IF YOU'RE WILLING to forgo pure quality in favor of sheer quantity, you can get great advice from Usenet newsgroups. Here are some of the sharpest groups around:

alt.comp.shareware: This low-volume group provides a manageable introduction to Net news.

alt.comp.virus: Get the virus and antivirus software skinny from *A* to *Z*. Beware of occasional obscene spam.

alt.sys.pc-clone.dell: Commune with other disgruntled, or gruntled, Dell PC users. See also alt.sys.pc-clone.gateway2000 and alt.sys.pc-clone.micron.

comp.dcom.modems: More than you ever wanted to know about modems, phone lines, and the human urge to communicate. Also don't miss comp.dcom.fax and comp.dcom.isdn.

comp.infosystems.www.browsers.ms-windows: The latest scuttlebutt on beta bugs, push and pull technologies, and Java and JScript. Warning: This is a high-volume group.

comp.os.ms-windows.win95.misc: The mother of all Windows 95 information resources. NT users should visit comp.os.ms-windows.nt instead; Windows 3.*x* is still being rehashed in comp.os.ms-windows.misc.

comp.sys.ibm.pc.hardware.*: Eight different groups cover topics including processors, computer systems, communications, networking, storage, CD-ROM drives, and video boards. If it's not discussed here, it's just not hardware. —Scott Spanbauer

1800472-7669 ext LCD

The most important feature to look for when buying an LCD projector...

At Sony, we've taken the quality and reliability for which the Sony name is known and incorporated those features in our LCD projectors. Whether you need SVGA, XGA, SXGA or VGA, Sony's LCD projectors deliver five big advantages that will make a vivid difference in your next presentation: 1) extra bright images; 2) extremely consistent, uniform images; 3) durable yet lightweight construction; 4) ease of set up; and 5) reliability in the form of a three year parts and labor warranty on every model*. Turn on our VPL-S500U SVGA model or any of five models in our family of LCD projectors and make your presentation with confidence. Call 1-800-472-7669 extension LCD, or visit us at our website at http://www.sony.com/professional.

Call now and receive a FREE CD ROM on "The Interactive Guide to Effective Presentations"

SONY

©1997 Sony Electronics Inc. Reproduction in whole or in part without written permission is prohibited. All rights reserved. Sony is a trademark of Sony. Simulated picture reception. Please allow 3-4 weeks for CD Rom delivery. *90 day lamp warranty applies. (See actual warranty for details.)

VPL-W400Q Widescreen Video LCD Projector

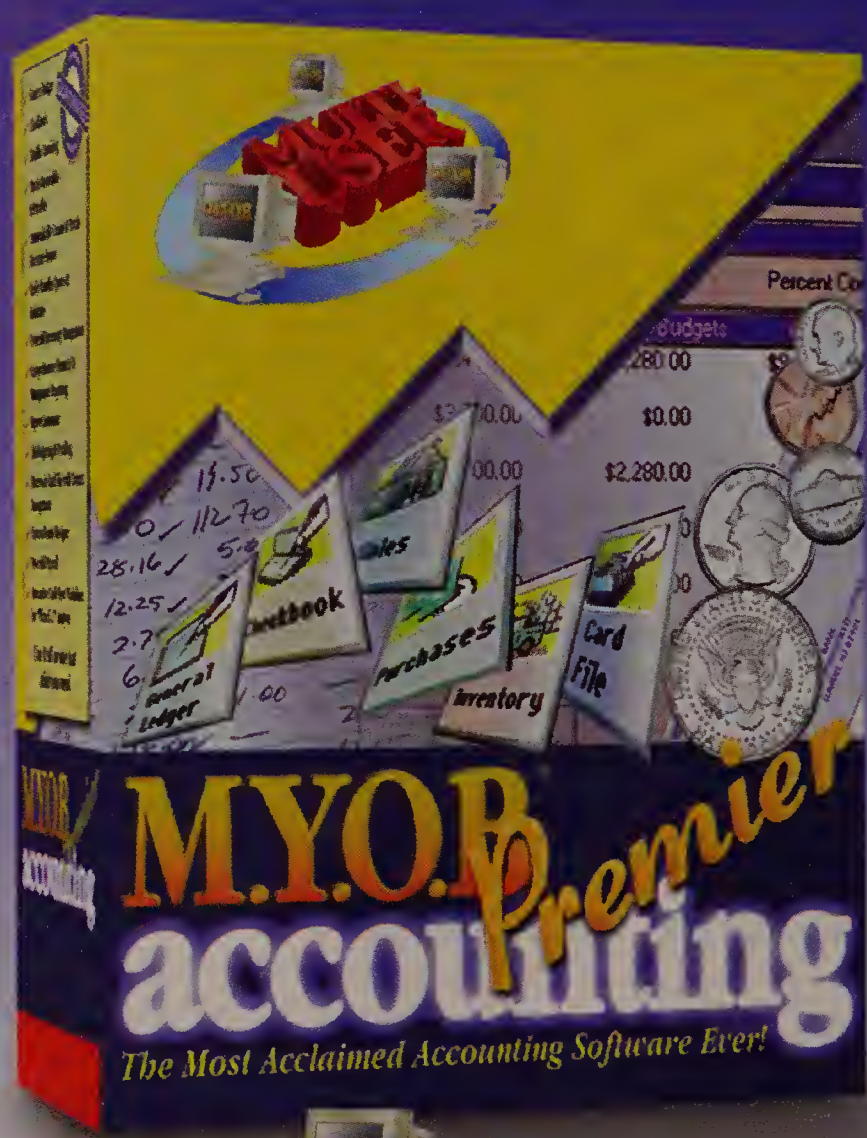
VPL-V800Q VGA System LCD Projector

VPL-V500Q VGA Portable LCD Projector

VPL-S800U SVGA System LCD Projector

VPL-S500U SVGA Portable LCD Projector

What's the Difference Between High End and Entry Level Accounting Software?



M.Y.O.B.® Premier FOR WINDOWS

The Ultimate Productivity Solution for Networks.

Your business is really cooking when you involve employees in the work-flow process. The ideal solution for your local network, *M.Y.O.B. Premier* combines the industry's easiest multi-user accounting software with the ultimate "bumper-to-bumper" maintenance membership, including product enhancements, version upgrades and unlimited Toll-Free technical support.

FREE TRIAL M.Y.O.B.® FOR WINDOWS VERSIONS

Best!Ware®

PCW 1097 300 Roundhill Drive Rockaway, New Jersey 07866

TO ORDER CALL
1-800-836-1812

Circle 39 on reader service card

IT REALLY IS LONELY AT THE TOP.

READERS' REPORT CARD

Notebook Vendors

A	**Dell**
B	Hewlett-Packard
	IBM
	Micron
	NEC
	Toshiba
C	Apple
	Compaq
	Gateway
	WinBook
D	Acer
	AST
	Texas Instruments
	ZDS
	ZEOS

PC MAGAZINE JULY 1997

SERVICE AND RELIABILITY SURVEY

When it comes to service and reliability, who's the one notebook maker you can truly count on? According to the nearly 8,500 people who responded to *PC Magazine*'s 10th Annual Service and Reliability Survey, there is only one. (Impressive considering they rated some 3,800 notebooks from 15 vendors, isn't it?) How did we earn the only "A"? Over the last year, our users reported better than average scores on four key measures: satisfaction with reliability, repair experience, and technical support; and the need for recent repairs. They also said they'd buy one again. To say the same for your notebook, visit us on the Web or give us a call.

NEW DELL® LATITUDE® LM M133ST
133MHz PENTIUM® PROCESSOR
WITH MMX™ TECHNOLOGY

- ★ **12.1" SVGA Active Matrix Display**
- ★ **16MB EDO RAM (72MB Max)**
- 256KB L2 Pipeline Burst Cache
- ★ **1.6GB Hard Drive**
- Options Bay accepts 12X Max[Ω] Variable CD-ROM, 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery
- ★ **PCI Bus with 128-bit Graphics Accelerator with 64K Colors**
- Integrated 16-bit Stereo Sound
- Smart Lithium Ion Battery
- ★ **Microsoft® Office 97 Small Business Edition**
- Microsoft Windows® 95
- IrDA 1.0 Standard Compliant
- Touchpad/Under 7 Pounds*
- Extendable 1 Year Warranty†
- ★ *Upgrade to 24MB EDO RAM, add $99.*

$2599

Business Lease◊: $94/Mo.
Order Code #800154

TO ORDER TOLL-FREE

800-766-0885

TO ORDER ONLINE

www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,*call 800-232-6978

Keycode #03299

MMX™ intel inside pentium® PROCESSOR

Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Business leasing arranged by third-party leasing companies to qualified customers. Ω12X Max./8X Min. *System weight with floppy drive or CD-ROM in options bay. ★Prices and specifications valid in the U.S. only and subject to change without notice. The Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. MS is a registered trademark of Microsoft Corporation. ©1997 Dell Computer Corporation. All rights reserved.

DELL®

ESSENTIAL #2

Antivirus Software

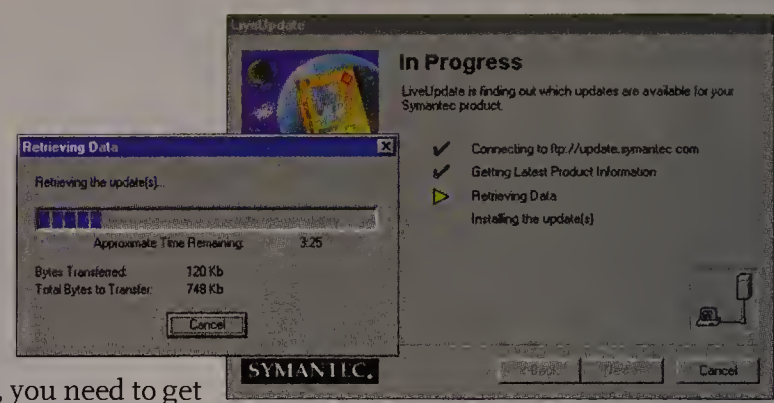
EVERY PARENT KNOWS that when the little ones go off to preschool, they're bound to come home with the flu. The same is true of the Internet. As soon as you're sharing data and programs with millions of users online, your computer's chances of coming down with a virus increase a hundredfold. You need an up-to-date antivirus package, and you need to use it correctly. Here's how:

1 Buy an antivirus program. Look for one that operates in the background, checking files as you work. It should be easy to set up, use, and—very important—update. When *PC World* last reviewed antivirus software (see "Virus Killers: The Best Software for Protecting Your PC," March 1997), Dr Solomon's Anti-Virus Toolkit was awarded the Best Buy by virtue of its ability to detect all the viruses we threw at it and remove 89 percent of them. I use Symantec's Norton AntiVirus, which also detected all the viruses but was able to remove only 77 percent of them. I like it because it's simple to use, versatile, and amazingly easy to update—you just click a button and it updates itself over the Net.

2 Run it in the background. This is the best way to use an antivirus program because it stays out of your way. You can also scan your drive for viruses daily or weekly, but thanks to the vigilance of what these programs do in the background, that isn't really necessary.

3 Update virus definitions at least monthly. New viruses are cropping up all the time. If you want to stay clear of them, you need to get regular updates from the folks who made your software. Most antivirus programs allow you to download new definitions off their Web sites—or better yet, through one-button, Net-based updating tools built into the programs themselves.

HOT TIP Scan your hard drive after updating your program's virus definitions. That way, you can make sure that the software hadn't been missing a newly discovered virus before you updated it.



NORTON ANTIVIRUS'S LiveUpdate provides the latest word on newly hatched viruses.

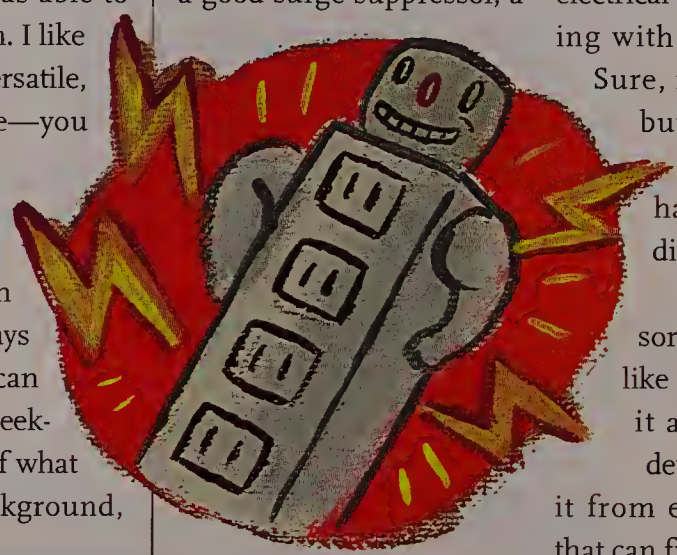
• **Dr Solomon's Anti-Virus Toolkit $85 street, Dr Solomon's Anti-Virus $50 street; Dr Solomon's Software; 800/960-9095; www.drsolomon.com**

READER SERVICE NO. 754

ESSENTIAL #3

A Surge Suppressor

POWER CORRUPTS, and electric power corrupts electrically. If you don't use a good surge suppressor, a sudden jolt of electricity can wipe out your computer. This is especially true if you live in an area with frequent electrical storms or a building with ancient wiring. Sure, it's a small risk, but do you want to bet all of your hard work on it? I didn't think so.



A surge suppressor looks and works like a power strip, but it also protects the devices plugged into it from electrical surges that can fry your hardware. If the surge suppressor is hit by a bigger jolt than it can handle, it will self-destruct, shutting off power to your computer and sacrificing itself for the good of more expensive hardware. Best of all, you can find a decent one for under $20.

HOT TIP Buy a surge suppressor with a UL 1449 rating of 330 volts or less and 240 or more joules. A unit with four to six outlets is probably sufficient. If you live in an area with a lot of electrical storms, get a surge suppressor with phone jacks for protection from surges coming through the phone line and into your modem.

AND THE OPTIONAL

An Uninterruptible Power Supply

IF YOUR WORK is so critical and time-sensitive that a sudden system crash would be an absolute disaster, get yourself an uninterruptible power supply. This is basically a battery with a surge suppressor attached. If a power failure occurs, you'll get enough juice to save your work and close things down gracefully.

For most people, the advantages of a UPS just aren't worth the device's $100 to $500 price. You can protect your work for free by saving to disk often—and far more crashes are caused by bad software than by a loss of power. I've never owned a UPS.

Still, there was that time when the power went out at the *PC World* office. While the rest of us screamed and cursed, the one editor with a UPS happily finished the paragraph he was writing, saved the document, exited Windows, and properly shut off his machine.

Find files from this article at www.pcworld.com/files. Lincoln Spector is a contributing editor and Michael S. Lasky and Scott Spanbauer are senior associate editors for PC World.

For more information about all products in this article, circle reader service no. 911.

Your PC Tune-Up Schedule

THINGS TO DO

Every Day

Scan your disk quickly Use Norton Utilities' Disk Doctor, Nuts & Bolts' Disk Minder, or Windows' ScanDisk to check for cross-linked files and other problems. For a quicker scan, turn off the surface scan option. Put the program Shortcut in your Startup folder so your disk gets scanned every time you load Windows.

Do an incremental backup At the end of the day, back up only those files that have changed since the last backup. In a hurry? Do an incremental backup of only your data folder and its subfolders.

THINGS TO DO

Every Two Weeks

Back up your entire hard drive A recent, full copy of your hard drive's contents is the best insurance you've got against data-loss disaster. Put in a fresh backup tape, close all running applications, and launch your backup program. Start a full backup, turn off the monitor, and leave the office —preferably for the night.

Defrag your hard drive Set your defragging software (Norton Utilities' Speed Disk, Nuts & Bolts' Disk Tune, or Windows' Disk Defragmenter) to its slowest and most complete setting, get it started, then turn off your monitor and walk away. A long lunch break will probably be enough time. If not, do it overnight.

Scan your drive Use Norton's Disk Doctor, Nuts & Bolts' Disk Minder, or Windows' ScanDisk to check the condition of your hard drive. This time, make sure the surface scan option is turned on.

THINGS TO DO

Every Month

Test your backup Backup drives and tapes aren't always dependable. About once a month, try to restore a few files from various folders—preferably files that are expendable. If you can't restore them, contact the tape drive manufacturer.

Update your virus definitions Your antivirus program vendor regularly posts updates that help the software spot the latest in malevolent engineering. Grab the updates off the vendor's Web site, or use the program's built-in update tool.

THINGS TO DO

When Installing Software

Make room on your hard drive To find out how much room you have on your drive, double-click *My Computer*, right-click the drive, and select *Properties*. You'll want enough space to load the entire program, plus 10 percent of your drive's total space.

If you don't have enough space, empty the Recycle Bin, look for files you can delete or archive, and uninstall applications you no longer use. Both Norton Utilities and Nuts & Bolts have tools that can help you determine which files are unworthy of disk space.

Back up the Registry Installation programs do all sorts of horrible things to user.dat and system.dat, the two huge and complex Registry files where Windows stores your configurations. You can't back up the Registry with Explorer or with DOS's copy command, but there's a program buried on the Windows 95 CD-ROM that lets you do it. Go to the disc's other\misc\cfgback folder, and copy cfgback.exe to your Windows folder and cfgback.hlp to your Windows\Help folder. To make a Registry backup, launch the cfgback.exe program and follow the directions.

Take a snapshot of Windows From a DOS prompt, enter the commands **dir c:\windows > before.dir** and **dir c:\windows\system >> before.dir**; note that the second command uses two greater-than (>) signs. This creates a text file listing all files in those directories—a big help if you decide later to restore your settings.

Do the installation Don't be too quick to go with defaults. Think about which components you need and where on your hard drive you want the program. In most cases, a subfolder in My Programs is the best location.

Take another snapshot This time the DOS commands are **dir c:\windows > after.dir** and **dir c:\windows\system >> after.dir**. Once you've created the before and after files, use a word processor or Norton Utilities' file comparison program to look at the changes.

Tell the new app about your data folder Find out where your new program saves its data files, and change the default to 1data (or whatever you call your data folder). ▶

ILLUSTRATIONS: GARY BASEMAN

THINGS YOU SHOULD

Do Once

Make emergency boot floppies You'll need them for that horrible day when your hard drive refuses to boot. Here are the essential steps:

1 To create your basic Windows 95 emergency boot disk, insert a floppy, go to the Start menu, and select *Settings•Control Panel*. Double-click *Add/Remove Programs*, click the *Startup Disk* tab, and click the *Create Disk* button. The resulting disk will contain a number of DOS-based utilities for examining and fixing your system.

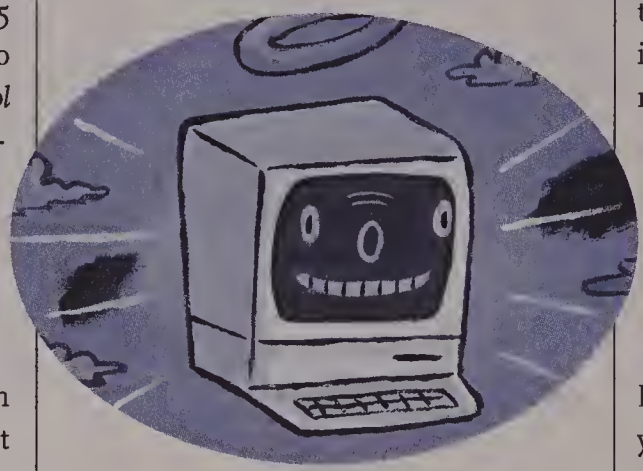
2 Programs like Symantec's Norton Utilities, Helix's Nuts & Bolts, and most major antivirus products create their own emergency boot floppies. If you have one of these programs, simply follow its instructions.

3 In case you ever have to reinstall Windows 95 itself, you'll need an emergency boot disk with your 16-bit CD-ROM drivers on it. If your computer came with Windows 95 already installed, this should be easy. From the Start menu, go to *Programs•Accessories•System Tools* and see if you have an option called *Create System Disks*. If not, try to find your old DOS autoexec.bat and config.sys files and your CD-ROM drivers and then save them on a floppy disk.

4 Write-protect all your boot floppies and store them in a safe place where you can access them easily.

Buy a surge suppressor A sudden surge in electricity can transform your PC into a piece of avant-garde sculpture. Look for one with a UL 1449 rating of 330 volts or less and at least 240 joules; make sure it has enough outlets to meet your needs.

Also worth considering: a suppressor with phone jacks to go between the wall and your modem.



Buy a tape drive Look for a drive with a capacity at least equal to your hard drive's. That way, you can back up your entire system without having to be there to switch tapes.

- External drives that plug into the PC's parallel port are generally easier to install than internal ones, and they can be easily shared between computers.
- Test the tape drive by backing up and restoring some files before trusting it to do a real job.
- See "Better Safe Than Sorry" in the February 1997 issue for more details on the best tape drives for your money.

Buy a good set of utilities For thorough and safe disk scanning and defragging, crash protection, and assorted other forms of protection, you'll want Symantec's Norton Utilities or Helix's Nuts & Bolts. Either program does an excellent job, but Nuts & Bolts gives you more for your money. See "The Complete PC Toolbox" for more details.

You'll also want a full virus protection program—one that can watch your system and check new files, update virus definitions, scan your hard drive, and eliminate existing infections. We recommend Dr Solomon's Anti-Virus Toolkit; see "Virus Killers: The Best Software for Protecting Your PC," March 1997, for more information.

Decide how to partition your hard drive If your hard drive is 1GB or larger and your PC uses the FAT16 file system, it's time to divide the drive. Using a partition program (I like PartitionMagic), make your logical C: drive 1023MB, the largest it can be and still have 16K clusters. Why 16K? Because a 511MB drive—the largest capacity that allows 8K clusters—fills up too quickly with today's software.

On drive C:, put Windows, your data, and as many of your regular programs as will fit. Name the rest of the hard drive D:, and use it to hold apps you don't work with a lot, large disk-hogging programs, and major downloads. If you find yourself keeping a lot of little programs on D: that you don't use often but want to keep, compress them into archives—then you can access them later.

Organize your hard drive You should organize your data in a way that makes sense to you. Here's how:

1 Create a data folder on your hard drive. (If you're using Microsoft Office for Win 95 or later, you've already got one called My Documents.) Rename it **1data** or another name that's meaningful to you.

2 Create subfolders in the data folder to store your work logically by project, client name, or whatever works for you.

3 Move your data into the subfolders.

4 Set your applications to save new files to your data folder by default.

5 Put Shortcuts to your data folder—and possibly to subfolders within your data folder—on your desktop or in the Start menu. —Lincoln Spector ■

THINGS YOU SHOULD

Never Do

1 Never assume that disasters happen only to other people. You'll be sorry.

2 Don't unplug peripherals while your computer is turned on.

3 Don't shut off your PC without properly exiting Windows first. The next time you start Windows, you could be in for a nasty surprise.

4 Don't improve your computer in any major way—like installing RAM or upgrading your operating system—without first doing a thorough backup.

5 Never open a file you've just downloaded unless your antivirus program is up and running in auto-scan mode.

6 Don't store floppies or backup tapes near a magnet, such as in a telephone or monitor or on a refrigerator. It can wipe out their data.

7 Don't smoke near your computer. The smoke is bad for more than just your lungs.

8 Don't use your CD-ROM drive as a coffee cup holder. In fact, it's best not to drink or eat anything near your PC.

9 Don't grab your mouse by the cord and beat it against your computer just because you're frustrated.

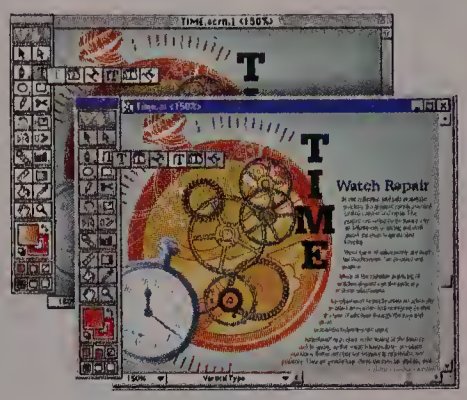
BUY NOW AND GET GRAPHICS • PLUG-INS LEARNING CD's IN THE BOX @ www.adobe.com/actionpack/print.html

NEW ADOBE® ILLUSTRATOR® 7.0
for WINDOWS®

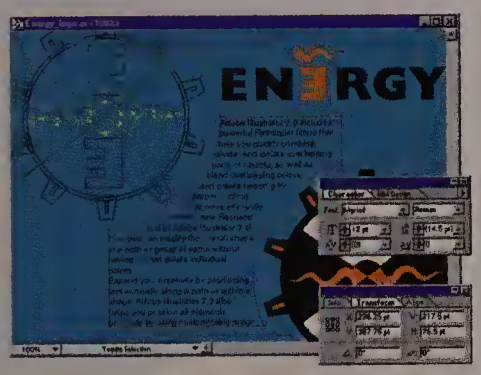
PICTURE THE POSSIBILITIES

NO JOB IS TOO BIG OR TOO SMALL. From the simplest graphics to the most complex artwork, new Adobe Illustrator 7.0 for Windows handles just about all your illustration jobs.

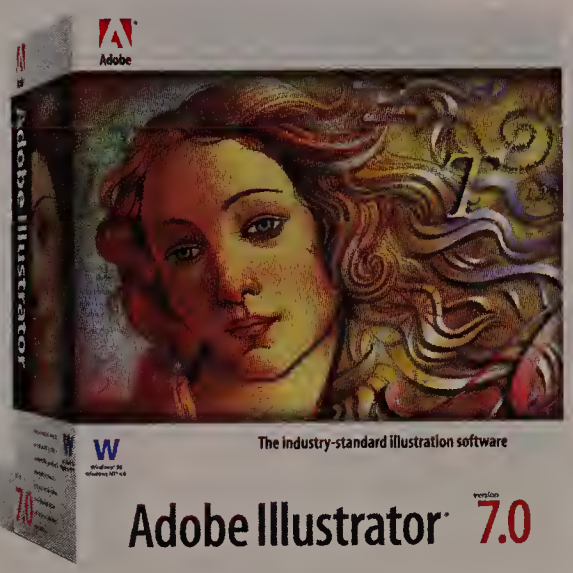
WORKS SEAMLESSLY WITH ADOBE PHOTOSHOP® and Adobe PageMaker® like no other illustration software. You learn and work faster, with the same user interface, including shortcuts and menus. Even drag & drop among all three programs.



WINDOWS AND MACINTOSH—SAME GREAT FEATURES. It's never been easier to share files across platforms with colleagues, clients and service bureaus.



PRECISE CONTROL OF ARTWORK AND TYPE. Create, transform and align elements just the way you want. Adjustable "snap-to" guides and grids make layout design easier. You can even wrap text around any shape or run type along any line.



UNMATCHED COMPATIBILITY. Input from anywhere, output for everywhere. Support for more than 20 image, graphics and text formats, including TIFF, WMF, CDR, PhotoCD,™ GIF89a and MS-Word—plus Adobe PostScript® printing, too.

AND TRY IT FREE.

Just look what's possible now that new Adobe Illustrator 7.0 for Windows is here. Experience first hand the amazing control and flexibility Adobe Illustrator offers graphics software users like you. Get your tryout version,* video guided tour & product brochure all on CD-ROM, ABSOLUTELY FREE. Just go to *www.adobe.com/illustrator/freecd* to get your FREE CD-ROM. Or buy new Adobe Illustrator 7.0 at your favorite place to get software, and get the Adobe ActionPack® CD set free.

Adobe

Free Adobe ActionPack with purchase of Adobe Illustrator, Photoshop or PageMaker. Offer good on new retail units only, while supplies last. Not valid on upgrades or volume licenses. *No purchase necessary. Offer good in the U.S. and Canada only, and only while supplies last or until 12/31/97. Please allow up to 8 weeks for delivery. CD-ROM contains video, product brochure and tryout versions. Tryout versions do not save or print. ©1997 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Illustrator, Photoshop, PageMaker, PostScript and ActionPack are trademarks of Adobe Systems Incorporated. Windows is either a registered trademark or trademark of Microsoft Corporation, Inc. Macintosh is a trademark of Apple Corporation, registered in the U.S. and other countries. PhotoCD is a trademark of Eastman Kodak. All other trademarks are the property of their respective owners.

Circle 12 on reader service card

WANT GOOD

BY NAOMI WISE

TECH SUPPORT? Good Luck...

We called, we e-mailed, we checked out Web sites. Our findings: Tech support from major software companies is rarely quick, seldom easy, and sometimes downright lethal.

SOME PEOPLE MAY BELIEVE that invisible angels hover over their shoulders as they work. But most computer users know it's the Devil they'll eventually meet in the details of their software. When good software goes bad (or is just devilishly difficult to use), who're you gonna call? You could look for an exorcist, but more likely you'll cleave to the earthly solutions of tech support.

A few support departments are heavenly indeed, but with others you must hack your way through a thicket of voice-mail menus to reach the lair of the technicians.

While some software vendors still offer free support through either toll or toll-free lines, most now require an up-front credit card outlay, especially for no-wait service. Nearly every vendor also offers some form of support online, the bulk of it free, but occasionally involving a fee for quick-turnaround e-mail.

To find out just how good software support really is, we assembled a team of reviewers to pose as innocent software users and try various support options. *PC World* experts devised real-world questions for six popular products from Corel, Intuit, Lotus, Microsoft, Netscape, and Symantec.

Our callers asked the same questions both on the phone and online. Then they compared the answers they received with the *PC World* experts' solutions.

The results of our tests prove what we all suspected: People answering tech support phones can be just as confused as you are. Paying for support doesn't guarantee a solution to your problem. Online support can be extremely helpful—if you have the time to search through the labyrinth of information offered.

Despite these negatives, there is good support out there. We found that some companies delivered solutions more consistently than others. Read on for details. ▶

MICROSOFT

The Bigger They Are, the Harder the Call

MANY USERS see Microsoft's technical support as off-limits because of the company's well-publicized fees for premium support. The truth is, though, you really can get free, unlimited toll-call support for most Microsoft desktop products (such as the Office suite or one of its components) if you bought them retail.

For preinstalled programs, you'll have to get support through your computer's manufacturer.

We mainly used fee lines to look into the company's software support. A Microsoft spokesperson subsequently confirmed that you'll reach the same set of techies whether or not you pay, unless you're buying pricey "consultant" support. We chose questions applicable to Word 7, since most of our readers use it and because support technicians should be familiar with it by now.

At Your Own Risk. Calling Microsoft, we found, can be unsafe at any price. Its products are the heart of most PCs, so if a technician suggests major software surgery to correct a minor problem, the results can be highly destructive. That's because the changes can affect Windows 95 as well as the application being "fixed." And overelaborate "fixes" were the order of the day.

By the time *PC World*'s Word tester, Michael Cahlin, was done following support instructions, his system was about done for, too. Microsoft, like most other software companies, covers itself legally with a disclaimer that states you use its telephone and e-mail support at your risk. Microsoft will try to help you fix any problems its advice causes, but if it didn't see you make the changes—who knows?—maybe you bollixed the instructions.

EASY

When I click once, Word highlights the text rather than positioning the cursor where I want it.

MODERATE

How can I set up Word with justified text as the default?

HARD

The Tools menu Customize command isn't there anymore. How can I get it back, since I can't get to the Customize dialog box now?

On call number one Microsoft's basic fee-based weekday support line picked up so quickly that Michael didn't even hear the phone ring. But then the voice-mail menus started, including a nudge for the pricey Priority Annual Support service. Once Michael emerged from the menu maze, his call was answered immediately. Unfortunately, the technician he reached treated Michael like a well-intentioned idiot, then quickly provided stunningly wrong answers to all three of the questions.

Calling at night proved slower and even more perilous. Michael listened to 14 minutes of singers "telling me their love was getting stronger the longer I held online," and then other vocalists urging, "don't go nowhere." Finally, a nonsinging human came on—but she was a technician for the PowerPoint application, not for Word. Rather than transferring Michael, she assured him she'd be able to help. Wrong. Her solution to our easy question resulted in damaging changes to the Windows Registry. (The correct answer called for a mere double-click.)

When Michael contacted Microsoft's per-incident paid support, his call was answered immediately. A representative took a credit card number, then promptly connected him to a well-spoken engineer who'd been working in tech support for a whopping three years—a veteran. The first question stumped the engineer: Like the other techies, he posited some mysterious catastrophe (perhaps involving the mouse driver) rather than just an accidental keystroke. But his other two answers were near-perfect.

Overall, out of the nine questions they were asked, the three Microsoft technicians came up with a total of two correct answers.

WAIT, THERE'S more! You'll **find the answers to the test questions** as well as expanded coverage at PC World Online: www.pcworld.com/oct97/support

Microsoft Online: Needle in a Haystack. At Microsoft's support Web site, it's easy to get updates, bug news, and product fixes and to learn what's new. But getting help with specific problems is not so simple. During peak hours you may not be able to reach the site at all—and if you do arrive, and your answers are not on the site's list of frequently asked questions, you can spend hours and still come up empty-handed.

'Search' a keyword, and you'll most likely get *too* many responses. Then you must refine your search with additional keywords. If you still can't find an answer, you can request e-mail support. Michael tried each resource, first perusing Microsoft Word Archives and the FAQs. He then went to the easy-to-use Troubleshooting Wizards, but his keyword entries brought up nothing useful.

Next, Michael tried Microsoft's Knowledge Base, the same encyclopedic tool that Microsoft's own technical help staff wrote and uses: "Even if you do find something relevant," he reports, "it's like trying to read a publication by the IRS."

Finally, he signed up for the $15 pay-per-incident e-mail support—a surprisingly convoluted process. He submitted his question but never received a response.

YOUR CALL is important to us—Microsoft's tech support office is typical of many in the industry.

SYMANTEC

Nice Answers When You Can Get Them

SYMANTEC'S TECHNICAL help department initially acts as if it would rather not hear from you. There's no toll-free number and no weekend or after-hours live support. New users can receive free telephone support for the cost of the call for 90 days from the date of their first call. After that, the company's Web site is the best means of free support.

We called for support for Symantec's Norton Utilities for Windows 95 and learned that if you have the fortitude to make your way through tech support's thorny barriers, you'll be duly rewarded.

Voice Mail Hell for Dummies. Most Symantec support staffers really seem to know their stuff. (Nine questions brought eight good-to-flawless answers and one near-right solution). The problem lies in reaching these pros.

Symantec picks up the line immediately but then bombards you with endless menu choices. If you choose Norton Utilities for Win 95, you hear a long recorded litany of problems (and some solutions), intended for anyone foolish enough to try coercing Norton and Microsoft Office into peaceful coexistence on a single system. When the oration ends, you suffer through more menus and recitations before you're mercifully asked to "hold for the next available agent."

On his first call, tester Michael Cahlin listened to a jukebox-full of on-hold music and then a pitch for faster service—just call one of the fee-for-service lines. After 12 minutes, a live technician swiftly gathered Michael's name and phone number and assigned him a "contact ID" number. (The ID automatically brings up a file containing your name and data on future calls.)

EASY

I want to update my Rescue Disk. When I double-click the sensor in the Norton System Doctor, all I get is its Properties page. If I right-click on the sensor and choose Update, nothing happens.

MODERATE

My disk is messed up, and I want to run the Norton Diagnostics. Is there a way to do this when Windows 95 won't open?

HARD

Using the Swap File Utilization utility, I see that my Windows 95 swap file is 96 percent in use. Does this mean I should make my swap file bigger?

The first technician answered all three questions correctly, including a resourceful and exacting solution for the second question. The next call elicited even better support, from a technician who proved exceptionally patient and knowledgeable as he walked Michael through detailed (and correct) answers. So far, the score was a perfect six out of six.

Then Michael called the toll-free Premium Care Management (for a $29 per-call fee). The wait was brief—only about 15 seconds. The technician gave correct answers but eccentric explanations: That is, he aced the multiple-choice quiz but blew the essay question. We'd score him right on two out of three of his answers.

Symantec Online: The Slow Genie. Michael started his Web visit with Symantec's cool-looking Support Genie. He soon discovered that it's faster to bypass the graphical Genie wizard in favor of the text version—otherwise, the poky help features tend to time out. The Genie focuses on keywords but offered irrelevant answers to all three questions. The FAQ didn't touch the questions, either—nor could the Knowledge Base come up with specific solutions. After an hour of frustration, Michael tried the Discussion Groups but couldn't get through. Finally, he posted the questions on the Customer Service Discussion Group forum. Two weeks later, he'd gotten no replies. ▶

Timmy AND THE Temps

The Hidden World of Tech Support

SAY HELLO TO "TIM," a typical support technician who was willing to disclose the other side of tech support—anonymously, of course. For six months Tim has worked as a technician at one of several third-party companies that contract with Microsoft to handle overflow support calls. Apparently he is not happy in his work, nor unique in his discontent.

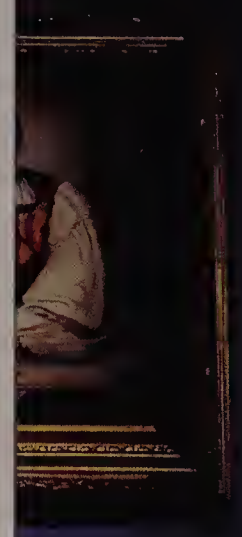
If Tim and his colleagues were a rock band, they'd be called Timmy and the Temporaries. Six months, Tim says, is average tenure before a techie moves on to better things; nine months makes a seasoned, wizened veteran. Tim's background is typical: a general high-school diploma and a military stint "working with computers."

To break into the exciting, lucrative computer industry, Tim had to start in the basement (or dungeon) known as a technical help department. Most coworkers, he found, were similarly motivated: "They don't have anything else to do with their computer skills." Many are off-the-street hires or are on six-month contracts with temp agencies. For $9 to $12 per hour, these hired guns start with three weeks of classroom training, then complete two probationary weeks of simulated and real calls.

Tim is supposed to check for answers in the Microsoft Knowledge Base, and if that doesn't provide an answer, to turn to more experienced hands through the inside "mentor queue," he says. More often, if the Knowledge Base fails him, Tim will turn to his peers. If nobody on the night shift's skeleton crew knows the answer, the techie fills out a form so a mentor can deal with the question the next day.

We asked Tim whether he knew of any detour around the maze of multiple-choice phone menus and hold times. Nope. What if you get a useless answer? Just ask (civilly, please) to have a supervisor call you back. If you hit a great technician, can you get your future calls routed to her? "Sorry," says Tim. "No way except by hiring her yourself." So it's purely random: Some days you get the ace, and some days you get—Tim. —N. W.

It makes everyone's work that much better.



You do your best work when you're having fun. It gives you permission to be creative. Which makes the revolutionary Document HomeCentre™ from Xerox® a wonderful addition to your home. The perfect partner for your PC, it encourages the entire

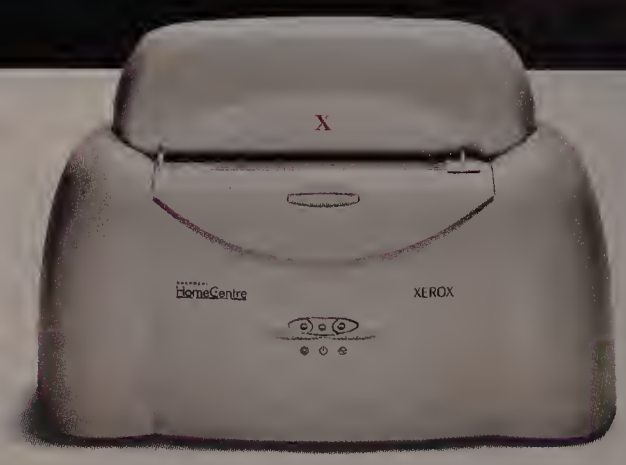
Color print, color copy and color scan your way to a creative nirvana.

family to create group projects or individual masterpieces. You see, most home computers have become places of solitary confinement, where loved ones all but disappear until forced to eat. But the HomeCentre turns your PC into a center of creative activity where everyone becomes "the genius in the family" in their own way.

No wonder people find it so

Our detachable scanner captures your world and frees your imagination.

inspiring. Print eye-catching newsletters you design with drag-and-drop simplicity. Copy sales pieces for a little down-home mass marketing. Scan the twisting brilliance of Van Gogh into a brilliant school report.



DOCUMENT
HomeCentre™

Xerox Brings the Power of Creativity Home.™

*Manufacturer's suggested retail price. XEROX ®, The Document Company ®, the digital X, Document HomeCentre, and Xerox Brings the Power of Creativity Home are registered trademarks and trademarks of XEROX CORPORATION.

Capture the beauty of the world around you. Make it your own. The fee for this creative license? Less than you'd think. You'll find the multi-talented HomeCentre value-priced at CompUSA and Staples. For more info, call 1-800-TEAM-XRX. Or surf the Web to www.xerox.com/products.html. And rediscover what you've known in your heart all along. Fun works.

You won't even have to ask your kids to install it — a single cable makes it easy.

$499*

THE DOCUMENT COMPANY

XEROX

NETSCAPE

Web of Intrigue

NETSCAPE doesn't offer much support, but what you do get, you get rapidly: Technicians answered each of our calls within 15 seconds. Officially, Netscape offers support only for the installation of *purchased* Navigator packages (not for the downloaded evaluation version, which tester Kirk Steers was using).

Help with anything further costs $25 per question. However, some technicians will freely answer questions that have nothing to do with installation.

Others not only collect your money but won't let you pass Go unless you can prove you bought the software. When challenged, our tester insisted that paying $25 for the tech-support call was enough, and he told the technician to stop hassling him about using an evaluation download. This approach always seemed to work.

Right Answers (Sometimes) for a Fee (Always). The Netscape voice-mail menu is complex and impatient, and callers who get lost in it are rapidly dumped on the first available technician. Since each question requires a separate $25 call, Kirk spoke with nine different staffers. All who faced the easy question got it right. Not a one could ace our moderate question. The hard question brought two right answers and one wrong.

When Kirk asked either of the two harder questions, four of the technicians insisted on knowing the origin of his Navigator. They balked at serving someone who had downloaded a free evaluation copy (even though the company was collecting $25 per phone call). Only one technician suggested that Kirk could call back for free if the first call didn't solve the problem. Netscape staff answered five out of nine questions correctly. Four techies were friendly and competent, two were friendly and incompetent, and three came across like IRS auditors.

Netscape Online: The Kindness of Strangers. Netscape's spiffy Web page outlines three steps for solving a problem. The FAQ is, as usual, great for common problems and useless for obscure ones. The Knowledge Base solved the easy problem quickly and included good background info, but no direct answer for the hard one. Kirk tried Netscape's newsgroups with the question, and two days later he received two replies—including one from a kind soul who answered correctly in two pithy sentences. ▶

EASY

When I access my favorite newsgroup, I get the message 'NNTP Error. No Permission to Talk'. Why?

MODERATE

When I try to open Navigator, all I get is my default home page—no menu bar, toolbar, or other controls. I can't enter an address, access my bookmarks, or anything. All I can do is click on links that are on that page.

HARD

I'm consistently getting '404 Not Found' errors, and I know the pages exist. What gives?

Help, Help–AND MAKE IT Quick!

Tips for Getting Better Software Support

Register. Some vendors are reluctant to provide support unless they're sure you paid for the software.

Keep notes. Document the symptoms and write down the steps you're given to remedy them.

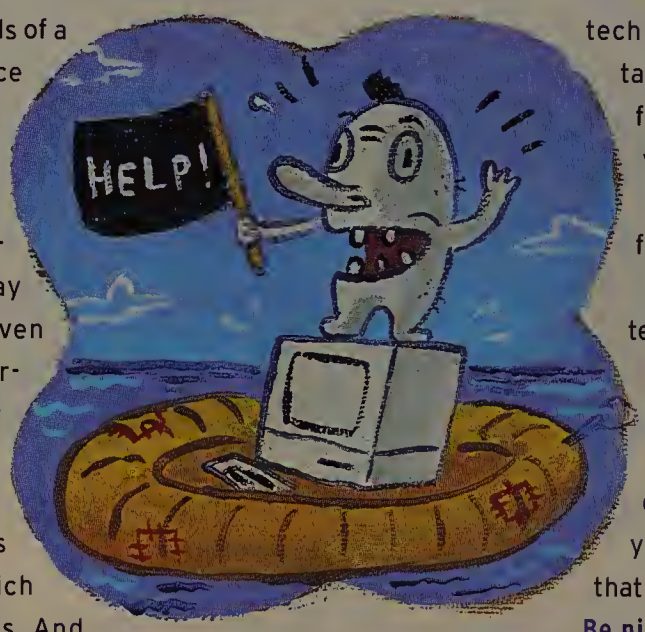
Ask your friends first. Find out if they've encountered the same problem and whether they were able to solve it.

Ask the universe. If you've got time to research a solution, try online newsgroups, user groups, mailing lists, and subscription-based services. Expert users can often give better advice than some hurried hireling.

Avoid after-hours calls. Not only does night and weekend support often cost extra, but it may put you in the hands of a skeleton staff of novice technicians.

Go local. Ask your retailer if it would be willing to seek out answers for you if you pay the store (you may even get it free if you purchased your computer there recently).

Log your calls. You'll save time on future calls if you jot down which menu options to press. And when you reach a technician, write down all the instructions—preferably *before* you try them on your computer. This will give you a record in case something happens to go wrong.



Back up and boot. During tech support calls, the technician typically walks you through the solution in real time, but if that remedy is both drastic and wrong, it may wreck all your custom configurations (or even fry your entire system). So have a backup and boot disk just in case.

Authenticate. Once you reach tech help, make sure you're talking to a representative from the division that provides support for the product. Don't take advice from a different division.

Identify. Write down your techie's name, and immediately give your own name and phone number for a callback in case you get disconnected. (Otherwise you'll have to listen to all that Vivaldi again.)

Be nice. On the telephone or online, be calm, tactful, and succinct in your questions—and don't forget to give praise when it's warranted. (Techies often mirror their callers' attitudes; after all, they're human, too.) —N. W.

The HP 300 Series Palmtop PC
Featuring the widest screen so you can view information like you would on your desktop PC
VGA wide screen: 640 x 240 pixels
Direct print capabilities through an infrared connection
Wireless e-mail and Internet access via Type II PC Card Modem*
Fast and easy synchronization with your desktop PC
From $499†

The problem with most handheld PCs is that the screen isn't wide enou

To get the whole picture, see our quick link: www.hpresource.com/palmtop-3

Optional accessory available at additional price. †Projected U.S. street price. Microsoft and Windows CE are U.S. registered trademarks of Microsoft Corporation. ©1997 Hewlett-Packard Company PPG450

HEWLETT® PACKARD

LOTUS

Easy as 1-2-3

When we called Lotus, we generally encountered a high level of service, getting both speed and accuracy. Waits were short, the voice-mail menu was brief and easy to navigate, and the answers were correct. But our third question involved LotusScript—a program still so new, only a few people had been trained to support it at the time of our research.

In each case, though, our Lotus tester, Contributing Editor Kirk Steers, received a callback with the answer within 4 hours. Monetarily, however, support is geared more toward corporations than to individual users or small businesses, with pay-to-play kicking in early and high. For the first 60 days, business-hours support is free for desktop products (but it requires a toll call); the free period drops to 30 days for communications products.

After that, or after hours, users with shallow pockets must go to Lotus's Web site and hunt for information. The alternative is to pay dearly for help.

Smart and Sweet. Tester Kirk Steers made all his phone calls during business hours, using Lotus's free support lines; all calls were picked up on the first ring.

Kirk already had a support ID number; when he entered it, the brief voice-mail menu quickly led him to the correct queue. Music ("a nice blues piece," according to Kirk) alternated with a wait-jockey reporting on traffic conditions at the site. In all three calls, Kirk was connected with a live person in less than a minute from the time he completed his obligatory voice-mail choices.

On Kirk's first call, the technician nailed the first two questions. When Kirk bemoaned some cumbersome chores of converting to the new scripting language, the technician sympathized. For the hard question, the technician reluctantly gave up after 10 minutes of research and transferred Kirk to the special LotusScript queue, where he left his name and number. Kirk got a callback a few hours later with an accurate answer.

The next call was similar, but this time an even smoother operator handled Kirk's feigned surliness so adeptly that he concluded, "Good thing I wasn't in the market for a used car."

The third call reached an apparently brand-new technician who endured the first two questions in evident terror. He got the easy one right but put Kirk on hold for 8 minutes to research the moderately difficult one.

He came back with the right answer, but his comments indicated he did not fully understand the implications.

Kirk didn't ask this technician the hard question, since its answer relied to some degree on the answer to the moderate question.

Overall, out of the eight questions asked, Lotus technicians provided seven correct responses: Four were immediate, and one was answered accurately in a callback.

Lotus Online: Spreading the Sheet Around. Kirk found Lotus's Web site easy to use. The Lotus Knowledge Base, he says, "appears to have considerable depth across all of Lotus's products, as well as a friendly search interface."

For the first question, Kirk (a spreadsheet pro) typed 'hiding sheets' in the search dialog box and received over 20 responses; the lead item contained the dead-on answer. But he knew the right keywords. If you don't, your search could be much longer and more frustrating.

Our admittedly savvy Web user needed only 5 minutes in all to obtain answers to our other questions. Novice search-engine users may take somewhat longer.

EASY

I've created a sheet and want to hide it using either the Sheet, the Hide, or the Sheet Properties' 'Hide sheet' option. But 'Hide sheet' is grayed out and unavailable. What do I do?

MODERATE

In 1-2-3 97 for Windows 95, I'm trying to record a macro. But none of the menus refer to either recording or running macros.

HARD

My scripted subroutine uses a Cell event such as CellContents-Change. I changed the name of the subroutine, and it will no longer run.

BEFORE YOU CALL TECH SUPPORT

- HAVE A PEN and pad handy for writing down telephone menu choices, names of people you speak to, and answers to questions.
- Be ready to provide the product identification number of your copy of the software.
- You may need to supply hardware details. (In Windows 95, you'll find this information by right-clicking the *My Computer* folder and selecting *Properties.*) If you don't know the specifics by heart, write down your PC's model number (or at least the type and speed of the processor), the RAM capacity, and model names of any hardware affected by the problem.
- Describe the problem as clearly as you can, and note all the steps you've taken to remedy it. (Writing all of this down before you call may help you explain the problem more clearly.)
- Bring up the errant program on your computer before you phone (if it will load, that is).

COREL

Drawing Conclusions

Corel provides free technical support for its products, but you pay for the toll calls to Ottawa, Ontario, which can quickly become expensive. (Support for Corel's recently acquired WordPerfect remains in Orem, Utah.)

At the main Corel tech support number, users asking the five most common questions are steered through voice mail to recordings that can solve their simple problems in a jiffy; if the answers there don't cut it, you can choose to be connected to a technician or opt to receive a ▶

intel inside pentium® PROCESSOR

The new Intel® Pentium® processor-based HP Vectra V and X Series PCs come with HP TopTOOLS:

Remotely upgrade the BIOS of multiple PCs* simultaneously

Remotely set DMI attributes on multiple PCs simultaneously

Remotely change administration BIOS passwords on multiple PCs simultaneously

Remotely collect asset data from any DMI-enabled** PC

FROM $992†

How would you upgrade the BIOS of 250 PCs?

Find out how at our quick link: www.hpresource.com/vectra-22

HEWLETT® PACKARD

ct V and X Series PCs only. **Based on DMI 1.0. †Starting U.S. street price for HP Vectra VE Series 3. Monitor not included. Price includes HP DeskDirect J3239A LAN adaptar card. The intel inside logo and Pentium are registered trademarks of Intel Corporation. ©1997 Hewlett-Packard Company PPG438

longer faxed publication on the question.

Corel's e-mail tech support is newly available on the Web. Called Answer Perfect, it promises turnaround in one business day but charges $14.95 per question. (If your question requires a complicated answer, this charge may be less than you'd pay to phone Canada during peak toll hours.) Our Corel tester, Contributing Editor Judy Heim, focused on CorelDraw 7, which was recently packaged with WordPerfect and has quickly acquired many new users.

Hold for Rachmaninoff. Unfortunately for those with more complex problems, Corel's voice-mail menu can run up toll charges for as long as 6 minutes. And Judy's woes were compounded: During our testing period, Corel's phone lines were being upgraded to correct a telephone company bug that disconnected anyone who waited more than 10 seconds before selecting a menu choice. Between this electronic rudeness, the upgrading (which caused some glitches of its own), and the endless menu, Judy had a miserable time reaching the "hold for the next available agent" message. The hold time featured classical music, interrupted every few bars by recorded ads for Corel products and seminars.

On the first call it took 11 minutes to reach a live voice. A friendly, very knowledgeable technician issued Judy a customer ID number to use in future calls and answered the easy question correctly. She also gave a fine, detailed account that included tips on making full use of the program. ("Bonus points here," Judy reports.) The second call for the moderate question involved a trying 6 minutes of voice-mail choices, plus 14 minutes of Rachmaninoff and product ads. Finally, another friendly technician provided a correct answer. With the hard question, total time from touch-tone to live and friendly human was just 6 minutes. His answer was accurate in concept, but he didn't seem to know the exact steps that Judy needed to go through to reach the desired result.

Corel Online: Hello, Is Anybody There? Judy tried the searchable FAQ database and the messages in Corel's online support forum—populated by users, but monitored by a technician who steps in on questions that aren't getting any takers. The answers weren't there, but Judy concluded, "This support forum is at least a pretty good place to look for explanations of CorelDraw's cryptic error messages." The new $14.95 Corel e-mail service, AnswerPerfect, wasn't in effect at press time but promises responses within one business day.

QUESTIONS

EASY

I opened a GIF file in CorelDraw 7. I can't seem to change the colors with the fill tool, paint over the image with the spray-can tool, or in fact paint any parts of it at all.

MODERATE

I want to create a fill pattern using a scanned picture of my kids. How do I do this?

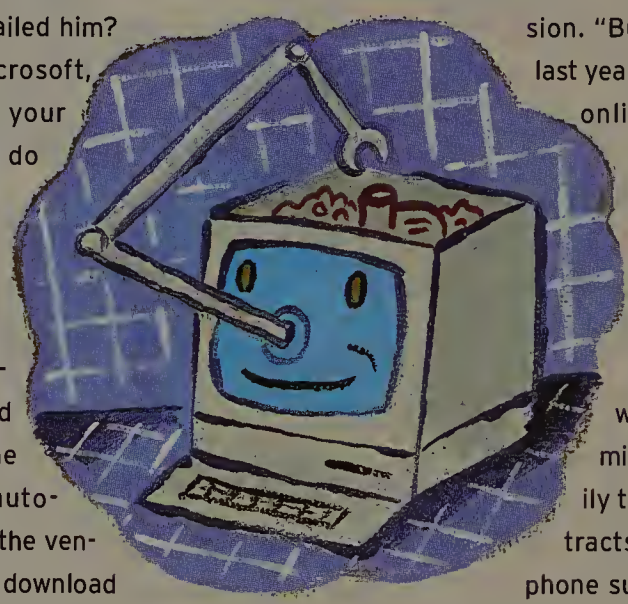
HARD

Can I get a diamond-shaped grid for precise drafting?

THE Future OF Tech Support

REMEMBER HOW the android Data in *Star Trek: The Next Generation* would run self-diagnostics and heal himself of what ailed him? According to Microsoft, someday soon your computer might do exactly that—with the help of a service that you subscribe to. The service will analyze hardware and software, find the problems, and automatically access the vendor's Web site to download and install whatever medicine the system needs (new drivers, bug patches, and so forth). All this will happen in the background, so you won't even be aware of it.

In the more immediate future, individual users may have to develop their own software-healing skills. Vendors are relying increasingly on Web site help and sponsoring user forums.



These tools ostensibly will become easier to use, even as other forms of support (mainly phone-based help) become less accessible.

"The primary users of Web site support today are information technology professionals, who are more advanced than the end users," says Denise Rundle, program manager of Microsoft's Support Online division. "But we've spent the last year trying to make our online support easy enough so that anyone can use it."

More and more, telephone support is becoming confined to businesses willing to pay a premium for help, primarily through annual contracts. Furthermore, the phone support will increasingly be contracted to third-party enterprises. While Microsoft and Lotus are already using third parties, third-party support for individual end-users will likely vanish in the face of consumer dislike for purchasing such contracts. —N. W.

INTUIT

Quick but Incomplete

INTUIT PROVIDES free technical support for its programs, but it's available through toll numbers located in Arizona or Virginia. It also has a forum on America Online, with bulletin boards where users can post questions and receive answers from technical staff (typically within two business days).

We created several questions for Quicken 6, the most recent version of the leading money management program.

Easy Does It. Tester Judy Heim's calls to the support number listed on the Quicken box required a few quick voice-mail choices and usually less than 2 minutes on hold. A pleasant-sounding woman answered the easy question immediately. The moderate question reached an ▶

Breakthrough Price

"We definitely need large screen displays to run our graphics programs. However, there isn't room in our small office for big 21" (various viewables) monitors. When we saw the 19" (18.0" viewable) Optiquest V95, we knew we'd found a winner."

Talk about breakthrough size! Optiquest® took the concept of a large screen 21" (various viewable) monitor, combined it with the small footprint of a 17" (various viewable), and created a brand new display – **the 19" (18.0" viewable) V95 monitor.**

Imagine! A screen large enough to handle graphics, business and Internet applications for PC and Mac® systems, yet small enough to fit into the limited space of a small office. In fact, the 19" (18.0" viewable) Optiquest V95 delivers the best of a traditional 21" (various viewable) screen, but costs approximately 45% less.

This display offers impressive performance with its 1,600 x 1,280 maximum resolution, 95kHz horizontal scan rate, super fine 0.26mm dot pitch for sharp, crisp images and a flat square screen. And it also includes OnView® controls for simple on-screen adjustments – all at the affordable Optiquest price. Plus it's backed by a limited three-year warranty.

Why settle for less? Get the best of both worlds – large screen performance in a small footprint. **Call 800-843-6784**, ask for agent 7847 to obtain the name of the dealer nearest you.

All business decisions should be this easy!

OPTIQUEST®

A ViewSonic® Company

438 Cheryl Lane, Walnut, CA 91789
(800) 843-6784
Internet:www.optiquest.com

PC Magazine Editors' Choice — Optiquest V775 October 1996
Home Office Computer Best Buy — Optiquest V774 April 1997
MacUser Rated — Optiquest V775 December 1996
PC World Top 10 Monitors — Optiquest V655 February 1997
Hardware Hall of Fame — Optiquest V775 July 1997

Corporate names and trademarks stated herein are property of their respective companies.
Specifications subject to change without notice.
Copyright © 1997, ViewSonic Corporation. All rights reserved

Circle 247 on reader service card

unenthusiastic technician who said he'd never heard of the error message and hadn't "the foggiest idea" what to do about it. He finally came up with a totally wrong answer.

The techie who fielded the hard question was friendly, intelligent, and articulate. Her simplified answer was correct as far as it went but didn't quite solve the problem (she missed a vital step).

All in all, three calls brought a 50 percent rate of correct answers, if you count the final answer as half-right.

Intuit Online: Slim Pickings. The company's Web site doesn't have a user forum, but it does offer an FAQ where Judy actually found the answer to the easy question—in full, including directions for replacing the unwanted sound effect with a better one.

She found no answer to the moderate question, and half an answer to the hard one, with instructions for converting records from DOS to Windows Quicken 6. But there was no help at all about what to do when transactions seem to be missing in action.

Subsequently, we posted the easy and hard questions on the AOL Intuit user forum bulletin board and received replies in 12 hours. The answers were correct and to the point.

EASY

How can I get rid of the obnoxious cash-register sound that occurs whenever I complete a transaction?

MODERATE

I just got an error message: 'Damaged Bag Item'. What does it mean, and what should I do now?

HARD

I upgraded from Quicken 7 for DOS, and some transactions are missing.

CONCLUSION

Good Help Can Be Hard to Find

AFTER ALL THESE TESTS, we're left to draw a few lessons. First, the level of technical support varies drastically from one company to the next, with the lowest percentage of correct answers coming from the companies with the most widely used products (Microsoft's Word and Intuit's Quicken). And it doesn't seem to matter much whether the support is free or for a fee, although in some cases paying brings quicker service.

Some of the best service is attached to high-end support packages (such as Lotus's corporate-directed plans), whose prices are attuned more to Fortune 500 budgets than to end users' wallets.

Overall, we found that Symantec and Lotus offered the best, most on-target phone support. Both had the best average in solving the questions we posed to them. Online, Lotus was equal to the task, but Symantec's graphical, we'll-make-it-easy-for-you approach was slow going.

Online support is great for do-it-yourselfers who have the time and the patience to search for answers in the vast sea of FAQs, knowledge bases, and companies' and forum users' responses to e-mail questions.

An additional rule of thumb: Technicians who are friendly, enthusiastic, and patient are also most likely to give correct answers. The grumps are probably that way because every call strains their meager skills. Accordingly, if you reach a grouch, you're probably better off ending the call ASAP and starting over. It'll save you time and grief in the long run, because those bad technicians won't exorcise your software's devils—and they may install a whole new bunch.

Naomi Wise is a freelance writer in San Francisco. Contributing editors George Campbell, Judy Heim, and Kirk Steers and Los Angeles freelance writer Michael Cahlin created the questions and answers used in our testing. Michael S. Lasky is a senior associate editor for PC World. ■

Third-Party SUPPORT

No Party, Little Support

IT'S A GREAT IDEA: Pay one price to a single company that will handle all your software problems.

So why hasn't this caught on? We got an inkling after we tried the services of Software Support, CompUSA, and Sitel Technical Services. When we called Software Support with our Netscape Navigator questions, we were first told the company didn't support Navigator—even though its Web site and brochure claimed it did. Another technician told us he could answer Navigator questions, but the call would cost $25. However, even after consulting with supposed Navigator experts, he couldn't give any answers.

Neither could the technicians at CompUSA's CompCare 900, a $2.49-per-minute national service (www.compusa.com). Our testers called with questions on Intuit Quicken 6, CorelDraw 7, and Navigator 3. Some technicians tried to bluff answers when it was clear they did not know the program at all. Others were quick to admit they had no idea, and referred us to the software vendor's support number. But they didn't even get that right, more than once giving our testers a disconnected number for a vendor.

The third company we tried, Sitel Technical Services (800/337-6906) was found through a Web search (www.etg-helpdesk.com), but it proved disappointing. Thirty bucks later, Sitel still had not answered our Microsoft Word questions. The Sitel tech finally suggested that we reinstall the program, when in fact the problem could have been solved simply with a double-click of the mouse. —Michael S. Lasky

A New Network PC Standard is Hatched

EVEREX

For more information about the Everex StepClient™,
Call 1-800-EVEREX-1

or visit our web site at
www.everex.com.

You'll learn more about how the new network PC standard has been hatched.

mbining a sleek, space-saving form factor with an innovative, scaleable system architecture, the Everex StepClient™ ovides a flexible, easy-to-manage solution that fits perfectly into any corporate network environment.

twork-ready with its integrated LAN controller, the Everex StepClient™ can be configured for an almost unlimited ge of network computing applications – from an economical NetPC to a high-performance mini-workstation featuring Intel Pentium® processor with a variety of Hard Drives to choose from. And with its support for the latest remote nageability features, the Everex StepClient™ helps reduce the cost of ownership as well as making it easier to manage ur network.

tel Inside logo and the Intel Inside Pentium Processor logo are registered trademarks of Intel Corporation. MMX is a trademark of Intel Corporation. STEP and StepClient are trademarks of Everex Systems, Inc. All other trademarks used herein are the property and/or registered ty of their respective owners. Specifications are subject to change without notice. © 1997, Everex Systems, Inc. All rights reserved.

EVEREX®
DESIGN
MANUFACTURE
SERVICE

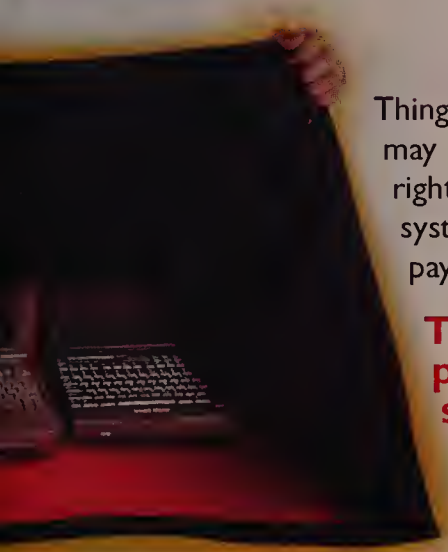
Dependable Computers. Since 1983

EVEREX STEP

intel inside pentium® PROCESSOR

"I don't know how he **does it**, but

Maurice, my account manager at CDW®, always comes up with product alternatives that save my company money."



Things aren't always what they seem. What may look like a real steal may be downright unproductive for your company's system. Or you could be wasting money paying for something you don't need.

There's someone at our place who can help you sort it all out.

He's your CDW account manager. And once he gets to know you, your company's purchase history and your system, he can turn you on to product options that are more cost-effective and productive for your company. And save you a lot of time and aggravation in the process.

Get more than just a great price.

For example, he'll answer your toughest compatibility questions before they become problems. Get you the **free tech support** you need before you need it. And, of course, line up the right price for you.

So give us a call. We'll set you up with your own product options expert. A business computer specialist who knows what's happening with all the different products from all the different manufacturers. That way, your company can choose from a huge selection of brand-name products like **IBM®**, **Compaq®**, **Hewlett-Packard®**, **Toshiba®** and **Microsoft®** at the best prices, in stock, ready for overnight delivery, and easy credit. You'll also get someone who can help you make the most of it all. And some honest, friendly, professional advice that will save you more than money.

Call today and get some free, objective advice and a free CDW catalog.

Check out some of our products and prices in the back of the magazine. Then give us a call. We'll send you our complete catalog. Or check us out at **www.cdw.com**. We think you'll discover that when it comes to getting the right, unbiased advice, as well as the right price, CDW is your only viable alternative.

CDW COMPUTER DISCOUNT WAREHOUSE™

The right price. The right advice.

800-767-4239 See our ad in the back

Circle 44 on reader service card

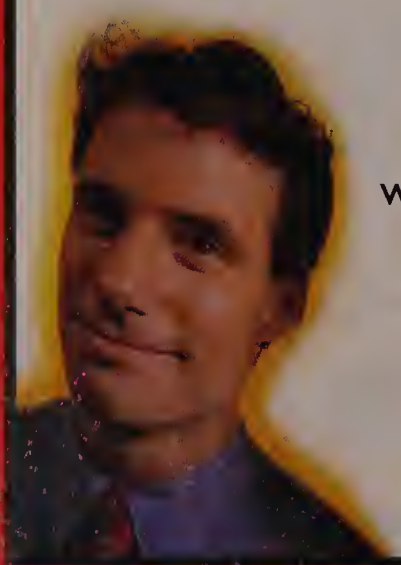
Copyright 1997 by CDW Computer Centers, Inc.

CDW® and TOSHIBA offer you a rare sales tool. It's called double coverage.

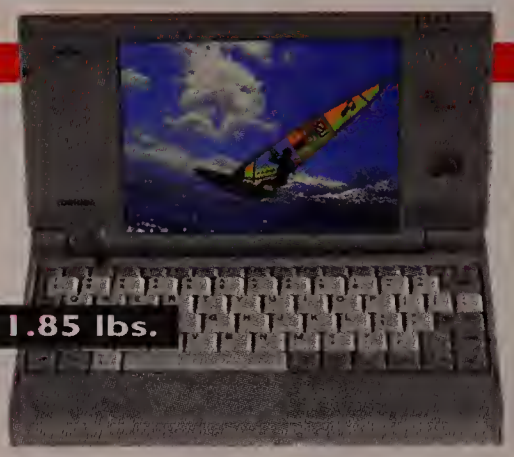
CDW and Toshiba offer the perfect balance of solutions, savings and selection.

All Toshiba computers combine value pricing, advanced performance, upgradeability and superior dependability with a host of features tailored to suit your most demanding computing needs.

At **CDW**, we'll give you more than just a great price. We'll set you up with your own personal account manager who'll offer honest, friendly and professional advice that'll save you more than money. We'll custom configure your new computer purchase–we'll even ship it the same day you buy it. Our team of Toshiba-trained technicians will offer up their expertise and support should you need it. And we'll provide you the comfort of knowing that **CDW** is the #1 direct reseller of Toshiba products–we know Toshiba like no one else.



"Free with every order: your own personal **CDW** account manager."



Libretto 50CT

Mini-notebook
75MHz Pentium
16MB EDO RAM
772MB hard drive
6.1" active-matrix display
1MB DRAM, 32-bit video
16-bit sound
Windows 95
1-year limited warranty

$1929.45 CDW 90

Tecra 500CDT

Notebook
120MHz Pentium
256KB L2 cache
16MB EDO RAM
1.26GB hard drive
6X CD-ROM drive
12.1" active-matrix display
2MB DRAM, PCI video
28.8K bps modem
16-bit sound
Windows V3.11 and Windows 95
3-year limited warranty

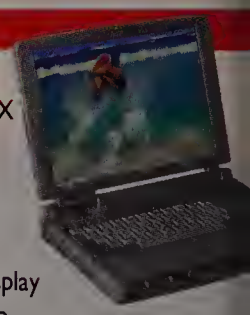
$1995.94 CDW 70

Tecra 510CDT

Notebook
133MHz Pentium
256KB L2 cache
16MB EDO RAM
2.02GB hard drive
10X CD-ROM drive
12.1" active-matrix display
2MB DRAM, PCI video
28.8K bps modem
16-bit sound
Windows V3.11 and Windows 95
3-year limited warranty

$2699.76 CDW 77241

Tecra 520CDT



Notebook
166MHz Pentium MMX
256KB L2 cache
32MB EDO RAM
2.02GB hard drive
10X CD-ROM drive
12.1" active-matrix display
2MB DRAM, PCI video
33.6K bps modem
16-bit sound
Windows 95
3-year limited warranty

$4159.45 CDW 90355

Tecra 530CDT w/12.1" XGA active-matrix di
CDW 90359 **$4579.17**

Tecra 730XCDT

Notebook
150MHz Pentium MMX
256KB L2 cache
16MB EDO RAM
2.02GB hard drive
10X CD-ROM drive
12.1" XGA active-matrix display
2MB DRAM, 64-bit video
28.8K bps modem
Windows V3.11 and Windows 95
3-year limited warranty

$3499.77 CDW 80957

Tecra 740CDT

Notebook
166MHz Pentium MMX
256KB L2 cache
16MB EDO RAM
3GB hard drive
10X CD-ROM drive
13.3" XGA active-matrix display
2MB DRAM, PCI video
28.8K bps modem
video conferencing kit
Windows V3.11 and Windows 95
3-year limited warranty

PRICE DRO

$4849.62 CDW 87964

Tecra 740CDT w/Windows NT Workstation
CDW 87965 **$4999.31**

QUALITY EXPRESS SERVICE AVAILABLE from CDW®

One great plan.
One great price.

Only $269

Should you have a computer problem, simply make one TOLL-FREE CALL!

Call your CDW account manager for details!

Free configuration of your computer purchase!

atellite 220CDS

otebook
3MHz Pentium
6KB L2 cache
MB EDO RAM
4GB hard drive
X CD-ROM drive
1" dual-scan display
B DRAM, PCI video
-bit sound
indows V3.11 and Windows 95
ear limited warranty

PRICE DROP!

$1899.13 CDW 89777

Satellite Pro 440CDX

Notebook
133MHz Pentium MMX
256KB L2 cache
16MB EDO RAM
1.34GB hard drive
10X CD-ROM drive
12.1" dual-scan display
2MB DRAM, PCI video
16-bit sound
Windows V3.11 and Windows 95
3-year limited warranty

$2359.54 CDW 90351

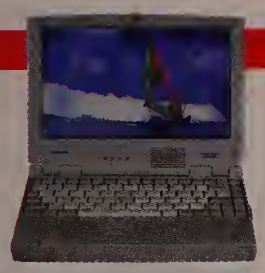
440CDT w/12.1" active-matrix display/33.6K bps modem
CDW 90352 **$2799.55**

Satellite Pro 460CDT

Notebook
166MHz Pentium MMX
256KB L2 cache
32MB EDO RAM
2.02GB hard drive
10X CD-ROM drive
12.1" active-matrix display
2MB DRAM, PCI video
33.6K bps modem
16-bit sound
Windows V3.11 and Windows 95
3-year limited warranty

$3659.16 CDW 90353

ortege 300CT



PANORAMIC DISPLAY

-notebook
3MHz
Pentium MMX
6KB L2 cache
MB EDO RAM
1GB hard drive
.4" active-matrix display
B DRAM, PCI video
.6K bps modem
-bit sound
indows V3.11 and Windows 95
ear limited warranty

3369.46 CDW 90354

Portege 660CDT

Sub-notebook
150MHz Pentium
256KB L2 cache
16MB EDO RAM
1.35GB hard drive
10X CD-ROM drive
11.3" active-matrix display
2MB DRAM, PCI video
28.8K bps modem
16-bit sound
Windows V3.11 and Windows 95
3-year limited warranty

$3899.63 CDW 77243

nfinia 7201

ni-tower
0MHz
Pentium MMX
6KB L2 cache
MB EDO RAM
GB hard drive
X CD-ROM drive
B S3 ViRGE/DX
-bit sound
indows 95
year limited warranty

1989.24 CDW 84560

Equium 6260M

NEW!

Mini-tower
266MHz Pentium II
512KB L2 cache
32MB EDO RAM
3.73GB hard drive
16X Max CD-ROM drive
4MB ATI 3D RAGE II+ video
Windows NT Workstation
16-bit sound
3-year limited warranty

$2569.07 CDW 93106

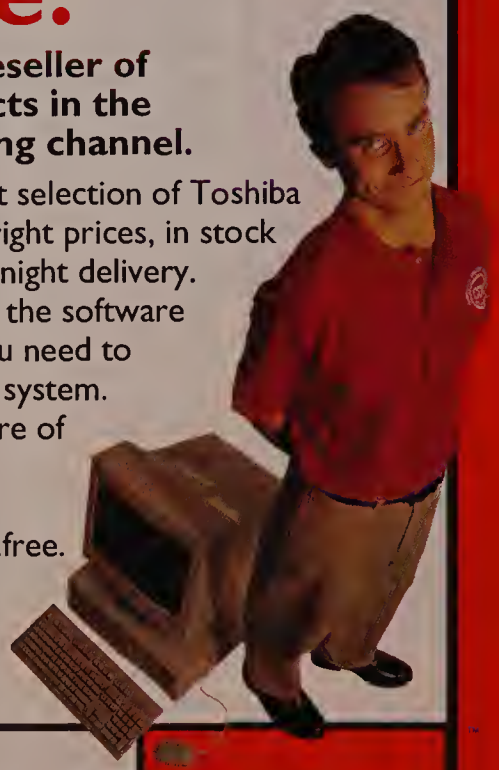
Monitors shown sold separately

Your one-stop source.

CDW is the #1 reseller of Toshiba products in the direct marketing channel.

We've got the best selection of Toshiba computers at the right prices, in stock and ready for overnight delivery. And we have all of the software and peripherals you need to custom-build your system. We'll even take care of the hard stuff like installation and technical support...free.

Just give us a call.



CDW COMPUTER DISCOUNT WAREHOUSE

The right price.
The right advice.

800-767-4239 See our ad in the back

©1997 CDW® Computer Centers, Inc. www.cdw.com/pwl

Circle 41 on reader service card

COMPUTER DISCOUNT WAREHOUSE™

COMPUTER DISCOUNT WAREHOUSE

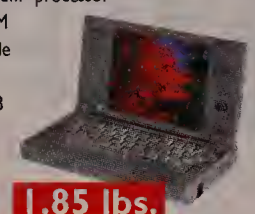
The right price.
The right advice.

Get mobile™

TOSHIBA

Libretto 50CT

- 75MHz Intel Pentium® processor
- 16MB EDO DRAM standard, expandable to 32MB
- 772MB hard drive
- 1.44MB external 3.5-inch PC card
- 6.1" active-matrix display



1.85 lbs.

$1929.45 CDW 90350

TOSHIBA

Tecra 500CDT

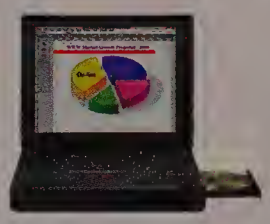
- 120MHz Intel Pentium® processor
- 16MB EDO RAM standard, expandable to 144MB
- 1.26GB hard drive
- 6X CD-ROM drive interchangeable with standard 1.44MB floppy drive
- 12.1" active-matrix SVGA color display
- Integrated 28.8K bps data/fax/voice modem

$1995.94 CDW 70243

IBM

IBM® ThinkPad® 380D

- 150MHz Intel Pentium® processor
- 16MB EDO RAM standard, expandable to 80MB
- 1.35GB hard drive
- 8X CD-ROM drive
- 12.1" dual-scan SVGA color display



$1999.50 CDW 86304

IBM

IBM® ThinkPad 760XD

- 166MHz Intel Pentium® processor with MMX technology
- 32MB EDO RAM standard, expandable to 104MB
- 3GB hard drive
- 8X CD-ROM drive
- 12.1" XGA active-matrix color display
- 28.8K bps data/fax modem

$4679.37 CDW 84101

Notebooks

Model	Processor	RAM std./max.	Hard drive	CD-ROM	Color display	Modem	Pointing device	Features	Price	CDW
Toshiba										
Satellite 220CDS	133MHz Pentium	16MB/144M8	1.34GB	10X	12.1" dual scan	—	AccuPoint track stick	Lithium ion battery	$1899.13	89777
Satellite Pro 440CDX	133MHz Pentium MMX	16MB/144MB	1.34GB	10X	12.1" dual scan	—	AccuPoint track stick	Lithium ion battery	$2359.54	90351
Satellite Pro 440CDT	133MHz Pentium MMX	16MB/144MB	1.34GB	10X	12.1" active matrix	33.6K bps	AccuPoint track stick	Lithium ion battery	$2799.55	90352
Satellite Pro 460CDT	166MHz Pentium MMX	32MB/160MB	2.02GB	10X	12.1" active matrix	33.6K bps	AccuPoint track stick	Lithium ion battery	$3659.16	90353
Portege 300CT	133MHz Pentium MMX	32M8/64M8	1.5GB	—	10.4" active matrix	33.6K bps	AccuPoint track stick	external floppy	$3369.46	90354
Portege 660CDT	150MHz Pentium	16MB/B0MB	1.2GB	10X	11.3" active matrix	28.8K bps	AccuPoint track stick	external floppy	$3899.63	77243
Tecra 500CDT	120MHz Pentium	16MB/144MB	1.26GB	6X	12.1" active matrix	28.8K bps	AccuPoint track stick	16-bit stereo sound	$1995.94	70243
Tecra 510CDT	133MHz Pentium	16M8/144M8	2.1GB	10X	12.1" active matrix	28.8K bps	AccuPoint track stick	16-bit stereo sound	$2699.76	77241
Tecra 520CDT	166MHz Pentium MMX	32M8/160MB	2GB	10X	12.1" active matrix	33.6K bps	AccuPoint track stick	SVGA resolution	$4159.45	90355
Tecra 530CDT	166MHz Pentium MMX	32MB/160MB	2GB	10X	12.1" active matrix	33.6K bps	AccuPoint track stick	XGA resolution	$4579.17	90359
Tecra 730XCDT	150MHz Pentium MMX	16MB/144MB	2GB	10X	12.1" active matrix	28.8K bps	AccuPoint track stick	full duplex speakerphone	$3499.77	80957
Tecra 740CDT	166MHz Pentium MMX	16MB/144M8	3GB	10X	13.3" active matrix	28.8K bps	AccuPoint track stick	video conferencing kit	$4849.62	B7964
Tecra 740CDT	166MHz Pentium MMX	16MB/144M8	3GB	10X	13.3" active matrix	28.8K bps	AccuPoint track stick	Windows NT V4.0	$4999.31	87965
Compaq Armada										
1530DM	133MHz Pentium MMX	16MB/B0M8	1.4GB	10X	12.1" dual scan	33.6K bps	touch pad	full duplex speakerphone	$2499.00	91507
1550DMT	133MHz Pentium	16MB/B0MB	1.4GB	10X	12.1" active matrix	33.6K bps	touch pad	full duplex speakerphone	$2999.00	87070
15B0DMT	150MHz Pentium MMX	16MB/B0MB	2.1GB	10X	12.1" active matrix	33.6K bps	touch pad	full duplex speakerphone	$3499.00	90959
4130T	133MHz Pentium	16MB/48MB	1.0BGB	—	11.B" active matrix	—	touch pad	16-bit stereo sound	$2497.23	71116
4131T	133MHz Pentium	16MB/4BMB	1.4GB	—	12.1" active matrix	—	touch pad	16-bit stereo sound	$2849.00	80775
4150	150MHz Pentium MMX	16MB/B0MB	1.6GB	—	12.1" dual scan	—	touch pad	16-bit stereo sound	$2999.00	9150B
4160T	166MHz Pentium MMX	16MB/B0MB	2GB	—	12.1" active matrix	—	touch pad	16-bit stereo sound	$3999.00	91509
7330T	150MHz Pentium MMX	16MB/128MB	2.1GB	—	12.1" active matrix	—	EasyPoint III track stick	16-bit stereo sound	$4399.00	93735
7350MT	166MHz Pentium MMX	32M8/128M8	2.1GB	—	12.1" active matrix	33.6K bps	EasyPoint III track stick	16-bit stereo sound	$4899.00	93736
7710MT	150MHz Pentium MMX	16MB/144MB	1.6GB	optional	12.1" active matrix	33.6K bps	EasyPoint III track stick	64-bit PCI bus	$4399.00	B8242
7730MT	166MHz Pentium MMX	32MB/144MB	2.1GB	optional	12.1" active matrix	33.6K bps	EasyPoint III track stick	64-bit PCI bus	$4999.00	88241
7750MT	166MHz Pentium MMX	32MB/144MB	2.1GB	optional	12.1" active matrix	33.6K bps	EasyPoint III track stick	64-bit PCI bus	$5799.00	BB240
Compaq Presario										
1610	150MHz Pentium MMX	16MB/B0MB	1.6GB	14X	12.1" dual scan	—	touch pad	16-bit stereo sound	$2699.00	90515
15B5DMT	150MHz Pentium MMX	16MB/B0MB	2.1GB	12X	12.1" active matrix	33.6K bps	touch pad	16-bit stereo sound	$3499.00	92232
IBM ThinkPad										
3B0	150MHz Pentium	16MB/B0MB	1.08GB	optional	12.1" dual scan	—	TrackPoint III track stick	16-bit stereo sound	$1699.46	B6302
3B0D	150MHz Pentium	16MB/B0MB	1.35G8	BX	12.1" dual scan	—	TrackPoint III track stick	16-bit stereo sound	$1999.50	86304
3B0D	150MHz Pentium MMX	16MB/80MB	2.1GB	BX	12.1" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$3287.43	86305
560	133MHz Pentium	8MB/40MB	2.1GB	—	11.3" dual scan	—	TrackPoint III track stick	external floppy	$1899.56	811B4
560	133MHz Pentium	BMB/40MB	2.1GB	—	12.1" active matrix	—	TrackPoint III track stick	external floppy	$3789.45	B11B6
560E	150MHz Pentium MMX	16MB/B0MB	2.1GB	—	11.3" dual scan	—	TrackPoint III track stick	16-bit stereo sound	$2599.86	89290
560E	166MHz Pentium MMX	16MB/80MB	2.1GB	—	12.1" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$4186.26	89291
760ED	133MHz Pentium	16MB/72MB	2.1GB	6X	12.1" active matrix	28.8K bps	TrackPoint III track stick	XGA resolution	$3739.72	74B62
760E	150MHz Pentium	16M8/72M8	2.1GB	optional	12.1" active matrix	28.8K bps	TrackPoint III track stick	XGA resolution	$3578.40	74B63
760XL	166MHz Pentium MMX	16MB/104MB	2.1GB	optional	12.1" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$3769.88	B4102
760XL	166MHz Pentium MMX	32MB/104MB	2.1GB	optional	12.1" active matrix	—	TrackPoint III track stick	Windows NT V4.0	$4064.04	B4103
760XD	166MHz Pentium MMX	32MB/104MB	3GB	BX	12.1" active matrix	28.8K bps	TrackPoint III track stick	XGA resolution	$4679.37	B4101
765L	166MHz Pentium MMX	32MB/104MB	3GB	—	13.3" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$5999.71	B9293
765D	166MHz Pentium MMX	32MB/104M8	3GB	BX	13.3" active matrix	28.8K bps	TrackPoint III track stick	Mwave DSP subsystem	$6659.22	89292

800-767-4239

CDW® offers FREE configuration of your new notebook purchase!

www.cdw.com/pwl

©1997 CDW® Computer Centers, Inc.
200 N. Milwaukee Avenue, Vernon Hills, IL 60061 PCW3205F 10/97

ith the portable computing leaders

COMPAQ

rmada 1530DM

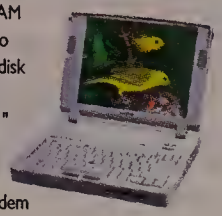
33MHz Intel Pentium® processor with MMX chnology • 16MB M standard, andable to 80MB 4GB hard drive 0X CD-ROM drive 2.1" dual-scan or display • 33.6K data/fax modem

$2499.00 CDW 91507

COMPAQ

Armada 7730MT

• 166MHz Intel Pentium® processor with MMX technology • 32MB RAM standard, expandable to 144MB • 2.1GB hard disk drive • Optional BX CD-ROM drive • 12.1" active-matrix color display • Integrated 33.6K bps data fax modem with DSVD



$4999.00 CDW 88241

HITACHI

VisionBook Plus 4140

• 133MHz Intel Pentium® processor • 16MB RAM • 1.4GB hard drive • 10X CD-ROM drive • 12.1" dual-scan color display • 33.6K bps data/fax modem

$1799.00 CDW 91046

TOSHIBA

Satellite Pro 440CDT

• 133MHz Intel Pentium® processor with MMX technology • 16MB EDO RAM standard, expandable to 144MB • 1.34GB hard drive • 10X CD-ROM drive • 12.1" active-matrix SVGA color display • 33.6K bps internal data/fax modem

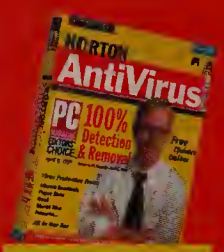
$2799.55 CDW 90352

Notebooks

Model	Processor	RAM std./max.	Hard drive	CD-ROM	Color display	Modem	Pointing device	Features	Price	CDW
AST Ascentia										
A60+	150MHz Pentium	16MB/80MB	1.44GB	10X	12.1" active matrix	—	SmartPoint touch pad	SRS 3D sound	$2658.65	B691B
A60+	150MHz Pentium	16MB/80MB	2.1GB	10X	12.1" active matrix	33.6K bps	SmartPoint touch pad	SRS 3D sound	$2979.63	B9632
A70+	150MHz Pentium MMX	16MB/80MB	1.44GB	10X	12.1" active matrix	33.6K bps	SmartPoint touch pad	SRS 3D sound	$3075.78	B6919
A70+	150MHz Pentium MMX	16MB/80MB	2.1GB	10X	12.1" active matrix	33.6K bps	SmartPoint touch pad	SRS 3D sound	$3445.14	B9633
P70	150MHz Pentium MMX	32MB/80MB	2.1GB	10X	12.1" active matrix	28.8K bps	SmartPoint touch pad	32-bit PCI bus	$3559.65	B75B0
P80	166MHz Pentium MMX	32MB/80MB	3GB	10X	12.1" active matrix	28.8K bps	SmartPoint touch pad	32-bit PCI bus	$3997.62	87629
Acer Texas Instruments										
Extensa 610CD	150MHz Pentium	16MB/64MB	1.4GB	10X	11.3" dual scan	—	touch pad	external floppy	$1964.67	BB530
Extensa 610CDT	150MHz Pentium	16MB/64MB	1.4GB	10X	11.3" active matrix	—	touch pad	external floppy	$2549.84	BB531
Extensa 660CD	166MHz Pentium MMX	16MB/80MB	1.35GB	10X	12.1" dual scan	—	touch pad	16-bit stereo sound	$2699.55	B3363
Extensa 660CDT	166MHz Pentium MMX	16MB/80MB	2.1GB	10X	11.3" active matrix	—	touch pad	16-bit stereo sound	$3179.04	B3364
TravelMate 7060	166MHz Pentium MMX	32MB/64MB	2GB	10X	12.1" active matrix	33.6K bps	touch pad	16-bit stereo sound	$4289.59	B8471
TravelMate 7063NT	166MHz Pentium MMX	32MB/64MB	3GB	10X	12.1" active matrix	33.6K bps	touch pad	Windows NT V4.0	$4949.69	BB472
TravelMate 6160	166MHz Pentium MMX	32MB/96MB	2.1GB	10X	12.1" active matrix	33.6K bps	track stick	external floppy	$4699.26	B1406
Fujitsu LifeBook										
435Dx	133MHz Pentium MMX	16MB/80MB	1.3GB	10X	12.1" dual scan	—	touch pad	SVGA resolution	$1999.00	92945
555Tx	150MHz Pentium MMX	16MB/80MB	2GB	10X	12.1" active matrix	33.6K bps	GlidePoint touch pad	16-bit stereo sound	$3499.00	B500B
565Tx	166MHz Pentium MMX	32MB/96MB	2GB	20X	12.1" active matrix	33.6K bps	GlidePoint touch pad	XGA resolution	$4299.00	92055
635Tx	133MHz Pentium MMX	16MB/80MB	2GB	16X	12.1" active matrix	33.6K bps	touch pad	16-bit stereo sound	$3199.00	92058
655Tx	150MHz Pentium MMX	16MB/80MB	1.3GB	BX	12.1" active matrix	33.6K bps	touch pad	external floppy	$3799.00	B5013
656Tx	150MHz Pentium MMX	16MB/80MB	2GB	16X	12.1" active matrix	33.6K bps	touch pad	SVGA resolution	$4299.00	92061
Hitachi VisionBook										
4140	133MHz Pentium	16MB/128MB	1.4GB	10X	12.1" dual scan	33.6K bps	touch pad	16-bit stereo sound	$1799.00	91046
4150x	150MHz Pentium MMX	16MB/128MB	1.4GB	10X	12.1" dual scan	33.6K bps	touch pad	16-bit stereo sound	$2499.00	91047
4360x	166MHz Pentium MMX	16MB/128MB	2.1GB	10X	12.1" active matrix	33.6K bps	touch pad	SVGA resolution	$3499.00	91049
7340	133MHz Pentium MMX	16MB/144MB	1.4GB	10X	12.1" active matrix	56K bps	GlidePoint touch pad	16-bit stereo sound	$3199.00	91051
7360	166MHz Pentium MMX	32MB/144MB	2.1GB	10X	12.1" active matrix	56K bps	GlidePoint touch pad	16-bit stereo sound	$4499.00	91053
7560	166MHz Pentium MMX	32MB/144MB	3GB	10X	13.3" active matrix	56K bps	GlidePoint touch pad	XGA resolution	$4999.00	91054
8560	166MHz Pentium MMX	16MB/80MB	2.1GB	10X	13.3" active matrix	56K bps	GlidePoint touch pad	XGA resolution	$4799.00	91056
Hewlett-Packard OmniBook Notebook PCs										
800CT	166MHz Pentium MMX	16MB/80MB	2GB	—	10.4" active matrix	—	TrackPoint III track stick	external floppy	$3679.68	B5727
5700CT	150MHz Pentium MMX	16MB/128MB	1.86GB	optional	12.1" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$3597.52	B5720
5700CT	166MHz Pentium MMX	16MB/128MB	1.86GB	optional	12.1" active matrix	—	TrackPoint III track stick	16-bit stereo sound	$4039.53	B5721
5700CTX	166MHz Pentium MMX	16MB/128MB	1.86GB	optional	12.1" active matrix	—	TrackPoint III track stick	XGA resolution	$4098.82	B5723
5700CTX	166MHz Pentium MMX	32MB/128MB	2.79GB	optional	12.1" active matrix	—	TrackPoint III track stick	XGA resolution	$4574.01	B5722
Samsung Sens Pro										
521	133MHz Pentium	16MB/80MB	1.44GB	10X	12.1" active matrix	—	SensPad touch pad	16-bit stereo sound	$2349.27	BB011
523	133MHz Pentium	32MB/80MB	2.1GB	10X	12.1" active matrix	33.6K bps	SensPad touch pad	16-bit stereo sound	$2834.59	BB00B
525	150MHz Pentium MMX	48MB/80MB	2.1GB	10X	12.1" active matrix	33.6K bps	SensPad touch pad	16-bit stereo sound	$3298.71	BB002

"Check out these **HOT BUYS**"

Buy **any computer** and pick up Symantec's Norton Utilities and/or Norton AntiVirus for **HALF-PRICE!**



$33.00
CDW 90890

$34.09
CDW 90888

Must be on same invoice as computer purchase. Offer valid through 9/30/97 or while supplies last. Restrictions may apply; call your CDW account manager for details. Promotional packaging; product appearance may differ.

Nobody does prices better than CDW®

800-767-4239

www.cdw.com/pwl

Circle 58 on reader service card

©1997 CDW® Computer Centers, Inc.

PCM3205G 10/97 200 N. Milwaukee Avenue, Vernon Hills, IL 60061

CDW

COMPUTER DISCOUNT WAREHOUSE

The right price.
The right advice.™

PC brands

IBM

IBM PC300GL

• 166MHz Intel Pentium® processor with MMX technology • 16MB SyncDRAM standard, expandable to 128MB • 2.5GB hard drive • 1-year onsite limited warranty; 3-year parts warranty

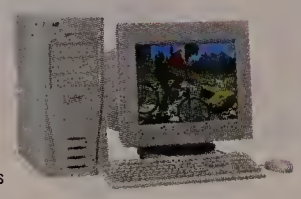
Monitor sold separately

$1179.37 CDW 89298

COMPAQ

Deskpro 2000 model 5133/1200

• 133MHz Intel Pentium® processor • 16MB EDO RAM standard, expandable to 128MB • 1.2MB EIDE hard drive • 3-year limited warranty includes first year onsite



Monitor sold separately

$979.00 CDW 7260B

COMPAQ

Presario 4504

• 200MHz Intel Pentium® processor • 16MB SyncDRAM standard, expandable to 64MB • 2.1GB EIDE hard drive • 16X Max EIDE CD-ROM drive • 56K bps internal data/fax/voice modem • 1-year parts, 1-year labor warranty; first year onsite

Monitor sold separately

$999.00 CDW 90509

TOSHIBA

Equium 5160D

• 166MHz Intel Pentium® processor with MMX Technology • 32MB EDO RAM standard, expandable to 192MB • 2.1GB hard drive • 12X CD-ROM drive • 10/100 Ethernet support

Monitor sold separately

$1418.82 CDW 84248

Desktops

Model	Processor	Chassis	RAM std./max.	Hard drive	CD-ROM	Video	Modem	Ethernet	OS	Features	Price	CDW
Compaq Deskpro 2000												
5133/1200	133MHz Pentium	desktop	16MB/128MB	1.2GB	optional	Cirrus Logic	—	—	Win V3.1/Win 95	Intelligent Manageability	$979.00	7260B
5133/2500	133MHz Pentium	desktop	16MB/128MB	2.5GB	optional	Cirrus Logic	—	—	Win V3.1/Win 95	Intelligent Manageability	$1089.00	72613
5166X/2100	166MHz Pentium MMX	desktop	16MB/384MB	2.1GB	optional	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1199.00	92269
5166X/3200	166MHz Pentium MMX	desktop	16MB/384MB	3.2GB	optional	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1309.00	92838
5166X/3200	166MHz Pentium MMX	mini-tower	16MB/384MB	3.2GB	16X Max	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1619.00	92839
5200X/2100	200MHz Pentium MMX	desktop	16MB/384MB	2.1GB	optional	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1389.00	92840
5200X/3200/CDS	200MHz Pentium MMX	mini-tower	32MB/384MB	3.2GB	16X Max	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1769.00	92842
5200X/3200	200MHz Pentium MMX	desktop	32MB/384MB	3.2GB	optional	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1579.00	92841
5233X/3200/CDS	233MHz Pentium MMX	desktop	32MB/384MB	3.2GB	16X Max	S3 Trio64V2/GX	—	—	Win 95	Intelligent Manageability	$1949.00	92843
6200/2500/CD	200MHz Pentium Pro	mini-tower	32MB/192MB	2.5GB	8X	Cirrus Logic	—	—	Win 95	Intelligent Manageability	$2109.00	72765
Compaq Deskpro 4000												
5133/1620	133MHz Pentium	desktop	16MB/256MB	1.62GB	optional	Cirrus Logic	—	10BT	Win V3.1/Win 95	Intelligent Manageability	$1199.00	72768
5133/1620/LS	133MHz Pentium	mini-tower	32MB/256MB	1.62GB	optional	Cirrus Logic	—	10BT	Win V3.1/Win 95	LS-120 drive	$1199.00	727B0
5166X/2400	166MHz Pentium MMX	desktop	16MB/256MB	2.4GB	optional	S3 ViRGE/GX	—	10/100	Win 95	Intelligent Manageability	$1389.00	92844
5166X/3200	166MHz Pentium MMX	desktop	32MB/256MB	3.2GB	optional	S3 ViRGE/GX	—	10/100	Win 95	Intelligent Manageability	$1599.00	92845
5166X/3200/CDS	166MHz Pentium MMX	mini-tower	32MB/256MB	3.2GB	16X Max	S3 ViRGE/GX	—	10/100	Win 95	Intelligent Manageability	$1799.00	92846
5200X/2400	200MHz Pentium MMX	desktop	32MB/256MB	2.4GB	optional	S3 ViRGE/GX	—	10/100	Win 95	Intelligent Manageability	$1689.00	92847
5200X/3200	200MHz Pentium MMX	desktop	32MB/256MB	3.2GB	optional	S3 ViRGE/GX	—	10/100	Win 95	Intelligent Manageability	$1759.00	9284B
6200/2500/LS/CDS	200MHz Pentium Pro	desktop	32MB/256MB	2.5GB	BX	Cirrus Logic	—	10BT	Win NT V4.0	LS-120 drive	$2149.00	72779
6233X/2500/CDS	233MHz Pentium II	desktop	32MB/192MB	2.5GB	BX	Cirrus Logic	—	10BT	Win NT V4.0	Intelligent Manageability	$2319.00	B8475
Compaq Deskpro 6000												
6200/4200/PDS	200MHz Pentium Pro	mini-tower	64MB/256MB	4.2GB	optional	Matrox Millennium	—	10BT	Win NT V4.0	PD-CD Drive	$3099.00	B4271
6200/2150/CDS	200MHz Pentium Pro	desktop	32MB/256MB	2.15GB	BX	Matrox Millennium	—	10BT	Win NT V4.0	Ultra SCSI	$2459.00	727B6
6200/4200/PDS	200MHz Pentium Pro	desktop	32MB/256MB	4.2GB	optional	Matrox Millennium	—	10BT	Win NT V4.0	PD-CD Drive	$2789.00	B426B
6233X/2150/PDS	233MHz Pentium II	desktop	32MB/192MB	2.15GB	optional	Matrox Millennium	—	10BT	Win NT V4.0	PD-CD Drive	$2629.00	BB473
6266X/4200/CDS	266MHz Pentium II	desktop	32MB/192MB	4.2GB	8X	Matrox Millennium	—	10BT	Win NT V4.0	Ultra SCSI	$3179.00	BB474
Compaq Presario												
2120	150MHz processor with MediaGX	desktop	24MB/128MB	2GB	BX	MPEG full-motion playback	33.6K bps		Win 95	10-stage equalization	$999.00	BB172
2200	180MHz processor with MediaGX	desktop	16MB/64MB	1.6GB	BX	MPEG full-motion playback	33.6K bps		Win 95	10-stage equalization	$799.00	92B52
4504	200MHz Pentium	mini-tower	16MB/64MB	2.1GB	16X Max	64-bit PCI accelerated	33.6K bps	—	Win 95	JBL Pro stereo speakers	$999.00	90509
4B14	233MHz Pentium MMX	mini-tower	32MB/256MB	6.5GB	24X Max	64-bit PCI accelerated	56K bps	—	Win 95	Creative Imaging	$2299.00	90512
4B24	233MHz Pentium II	mini-tower	32MB/256MB	6.5GB	24X Max	64-bit PCI accelerated	56K bps	—	Win 95	Zip drive	$2699.00	90513
IBM Aptiva												
C3E	233 MHz Pentium MMX	mini-tower	32MB/64MB	4.2GB	16X Max	ATI 3D RAGE II	33.6K bps	—	Win 95	Intel Video Phone	$1939.05	90536
C3D	233 MHz Pentium MMX	mini-tower	32MB/64MB	4.2GB	BX DVD	ATI 3D RAGE II	33.6K bps	—	Win 95	Intel Video Phone	$2699.00	90535
S9C	200MHz Pentium MMX	mini-tower	32MB/64MB	4.2GB	16X Max	ATI 3D RAGE II	33.6K bps	—	Win 95	Space-saving design	$1939.05	B3775
S3C	233MHz Pentium MMX	mini-tower	32MB/64MB	4.2GB	16X Max	ATI 3D RAGE II	33.6K bps	—	Win 95	Space-saving design	$2299.00	90537
S35	233MHz Pentium MMX	mini-tower	48MB/64MB	6.4GB	24X Max	ATI 3D RAGE II	33.6K bps	—	Win 95	Space-saving design	$2699.00	9053B
IBM PC Series												
PC 300GL	133MHz Pentium	desktop	16MB/256MB	1.2GB	optional	Cirrus Logic 5446	—	—	Win 95	Two USB ports	$979.89	85191
PC 300GL	166MHz Pentium	desktop	16MB/256MB	1.2GB	optional	Cirrus Logic 5446	—	—	Win 95	Two USB ports	$999.63	851BB
PC 300GL	166MHz Pentium	desktop	16MB/256MB	2.5GB	optional	Cirrus Logic 5446	—	—	Win 95	Two USB ports	$1109.18	B5190
PC 300GL	166MHz Pentium	desktop	16MB/256MB	2.5GB	16X	Cirrus Logic 5446	—	—	Win 95	Two USB ports	$1366.50	851B9
PC 300GL	166MHz Pentium MMX	desktop	32MB/256MB	2.5GB	optional	Cirrus Logic 5446	—	—	Win NT V4.0	Two USB ports	$1419.28	B5405
PC 300XL	233MHz Pentium II	desktop	32MB/384MB	2.5GB	16X Max	S3 Trio64V2	—	—	Win NT V4.0	Two USB ports	$2296.14	B6313
PC 300XL	233MHz Pentium II	desktop	32MB/384MB	2.5GB	optional	S3 Trio64V2	—	—	Win 95	Ultra SCSI	$1999.36	B6314
PC 300XL	266MHz Pentium II	desktop	32MB/384MB	4.2GB	16X Max	S3 Trio64V2	—	—	Win NT V4.0	Two USB ports	$2659.12	B6315
PC 300XL	266MHz Pentium II	desktop	32MB/384MB	4.3GB	16X Max	S3 Trio64V2	—	—	Win NT V4.0	Two USB ports	$2969.24	B6316

800-767-4239

CDW® offers FREE configuration of your new PC purchase!

www.cdw.com/pwl

©1997 CDW® Computer Centers, Inc.
200 N. Milwaukee Avenue, Vernon Hills, IL 60061 PCW3205H 10/97

ou know at prices you love!

AcerPower Network Ready

- 200MHz Intel Pentium® processor
- 32MB RAM standard
- 2.1GB hard drive
- Pre-installed 10BASE-T Ethernet card

Monitor sold separately

$996.32 CDW 91867

IBM PC 300XL

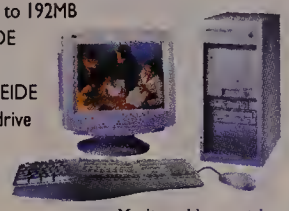
- 233MHz Intel Pentium® II processor
- 32MB EDO RAM standard
- 2.5GB EIDE hard drive
- 16X Max CD-ROM drive
- 1-year limited warranty; 3-year parts warranty

Monitor sold separately

$1999.36 CDW B6314

HP Vectra 525CD

- 200MHz Intel Pentium® processor with MMX technology
- 24MB EDO standard, expandable to 192MB
- 2.5GB EIDE hard drive
- 16X Max EIDE CD-ROM drive



Monitor sold separately

$1588.65 CDW 84444

HP Vectra VL 5 5/166

- 166MHz Intel Pentium® processor with MMX technology
- 16MB RAM
- 2.5GB hard drive
- 8X CD-ROM drive

Monitor sold separately

$1439.22 CDW 91121

Desktops

odel	Processor	Chassis	RAM std./max.	Hard drive	CD-ROM	Video	Modem	Ethernet	OS	Features	Price	CDW
IP Vectra 500 Series												
25CD	133MHz Pentium	mini-tower	16MB/192MB	1.2GB	BX	S3 Trio64	—	—	Win 95	Microsoft Office 95 Pro	$999.49	76404
20	166MHz Pentium	desktop	16MB/256MB	1.2GB	optional	SiS 6205	—	—	Win 95	Three year warranty	$1039.25	84434
20MCx	166MHz Pentium	desktop	16MB/256MB	1.6GB	16X Max	SiS 6205	33.6K bps	—	Win 95	16-bit stereo sound	$1327.64	B443B
25CD	166MHz Pentium	mini-tower	16MB/192MB	1.6GB	16X Max	SiS 6205	—	—	Win 95	MS Word and Publisher	$1234.78	84439
25COT	166MHz Pentium MMX	mini-tower	16MB/192MB	2.5GB	16X Max	S3 Trio64	—	—	Win 95	Two USB ports	$1489.65	B4440
25MCx	166MHz Pentium MMX	mini-tower	24MB/192MB	2.5GB	16X Max	S3 Trio64	33.6K bps	—	Win 95	16-bit stereo sound	$1549.65	B4443
25CD	200MHz Pentium MMX	mini-tower	24MB/192MB	2.5GB	16X Max	S3 Trio64	—	—	Win 95	Two USB ports	$1588.65	84444
25MCx	200MHz Pentium MMX	mini-tower	32MB/192MB	3.8GB	16X Max	Matrox Millennium	33.6K bps	—	Win 95	16-bit stereo sound	$1936.70	B4445
IP Vectra VE PC Series 3												
E3 5/133	133MHz Pentium	desktop	16MB/192MB	1GB	optional	SiS 6205	—	—	Win V3.1/Win 95	64-bit PCI graphics	$1034.82	7B23B
E3 5/133	133MHz Pentium	desktop	16MB/192MB	1.6GB	optional	SiS 6205	—	—	Win V3.1/Win 95	64-bit PCI graphics	$999.36	91103
E3 5/166	166MHz Pentium	desktop	16MB/192MB	1.6GB	optional	SiS 6205	—	—	Win V3.1/Win 95	64-bit PCI graphics	$1038.97	91105
E3 5/200	200MHz Pentium	desktop	16MB/192MB	1.6GB	optional	SiS 6205	—	—	Win V3.1/Win 95	64-bit PCI graphics	$1048.60	91107
IP Vectra VL PC Series 5												
L5 5/166	166MHz Pentium	desktop	16MB/192MB	1.6GB	optional	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1166.30	B5717
L5 5/166	166MHz Pentium MMX	desktop	16MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1377.09	91115
L5 5/200	200MHz Pentium	desktop	32MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1449.60	B6511
L5 5/200	200MHz Pentium MMX	desktop	32MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1598.63	91119
L5 5/233	233MHz Pentium MMX	desktop	16MB/192MB	2.5GB	optional	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1598.12	91120
L5 5/133	133MHz Pentium	mini-tower	16MB/192MB	1.6GB	optional	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1219.44	B6523
L5 5/166	166MHz Pentium	mini-tower	16MB/192MB	2.5GB	optional	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1229.50	B6527
L5 5/166	166MHz Pentium MMX	mini-tower	16MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1439.22	91121
L5 5/166	166MHz Pentium	mini-tower	32MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1519.54	B6421
L5 5/200	200MHz Pentium	mini-tower	16MB/192MB	2.5GB	BX	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1395.28	84733
L5 5/233	233MHz Pentium MMX	mini-tower	32MB/192MB	4GB	optional	S3 Trio64	—	—	Win V3.1/Win 95	Two USB ports	$1889.76	91123
oshiba												
quium 5160D	166MHz Pentium MMX	desktop	32MB/192MB	2.07GB	12X	2MB ATI 3D RAGE II	—	10/100	Win 3.11/Win 95	USB ports, DMI 2.0	$1418.82	B424B
quium 5200D	200MHz Pentium MMX	desktop	32MB/192MB	2.3BGB	12X	2MB ATI 3D RAGE II	—	10/100	Win 3.11/Win 95	USB ports, DMI 2.0	$1549.64	84249
quium 6200D	200MHz Pentium Pro	desktop	32MB/12BMB	2.95GB	12X	2MB S3 ViRGE 3D	—	10/100	Win NT V4.0	USB ports, DMI 2.0	$2118.60	B4251
quium 6200M	200MHz Pentium Pro	mini-tower	32MB/512MB	4.24GB	12X	2MB ATI 3D RAGE II+	—	10/100	Win NT V4.0	USB ports, DMI 2.0	$2479.47	84252
quium 6260M	266MHz Pentium II	mini-tower	32MB/256MB	3.73	16X	4MB ATI 3D RAGE II+	—	10/100	Win NT V4.0	USB ports, DMI 2.0	$2569.07	93106
finia 7161	166MHz Pentium MMX	mini-tower	32MB/12BMB	2.38GB	12X	2MB S3 ViRGE 3D	33.6K bps	—	Win 95	USB ports, SRS 3D sound	$1649.89	B4559
finia 7201	200MHz Pentium MMX	mini-tower	32MB/12BMB	3GB	12X	2MB S3 ViRGE 3D	33.6K bps	—	Win 95	remote control, TV/FM card	$1989.24	84560
ST Bravo												
C 5166	166MHz Pentium	desktop	16MB/3B4MB	1.6GB	optional	ATI mach64 VT3	—	—	Win 95	Two USB ports	$1006.00	932B6
C 5166M	166MHz MMX Pentium	desktop	16MB/3B4MB	2GB	optional	ATI mach64 VT3	—	—	Win 95	Two USB ports	$1115.18	932BB
C 5200	200MHz Pentium	desktop	16MB/384MB	2GB	optional	ATI mach64 VT3	—	—	Win 95	Two USB ports	$1137.16	932B9
S 5166	166MHz Pentium	mini-tower	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1625.72	91032
S 5166	166MHz Pentium	desktop	16MB/256MB	2GB	optional	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1245.78	91034
S 5166	166MHz Pentium	desktop	32MB/256MB	2GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1487.26	9103B
S 5166M	166MHz MMX Pentium	desktop	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1514.69	B9552
S 5166M	166MHz MMX Pentium	desktop	32MB/256MB	2GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1619.87	B9553
S 2000C/95	200MHz Pentium	desktop	32MB/256MB	2GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1459.06	B9546
S 2000C/NT	200MHz Pentium	desktop	32MB/256MB	2GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1549.10	B9547
S 3000C/95	200MHz Pentium	desktop	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1487.26	B9549
S 3000C/NT	200MHz Pentium	desktop	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1586.03	B954B
S 3000C/95	200MHz Pentium	mini-tower	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1564.09	B9550
S 3000C/NT	200MHz Pentium	mini-tower	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1649.08	B9551
S 3000C/95	200MHz Pentium MMX	mini-tower	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1779.77	B9573
S 3000C/NT	200MHz Pentium MMX	mini-tower	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1879.98	B9574
S 3000C/95	200MHz Pentium MMX	desktop	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win 95	Two USB ports	$1696.69	91570
S 3000C/NT	200MHz Pentium MMX	desktop	32MB/256MB	3GB	16X Max	ATI 3D RAGE II	—	—	Win NT V4.0	Two USB ports	$1799.25	91569
S-T 6200	200MHz Pentium Pro	mini-tower	32MB/12BMB	2.5GB	BX	Matrox Millennium	—	—	Win NT V4.0	16-bit stereo sound	$1886.33	7606B
C 6233	233MHz Pentium II	mini-tower	32MB/3B4MB	2GB	optional	S3 Virge/DX 3D	—	—	Win 95	Two USB ports	$2099.23	B910B
C 6233	233MHz Pentium II	mini-tower	32MB/3B4MB	2GB	optional	S3 Virge/DX 3D	—	—	Win NT V4.0	Two USB ports	$2197.23	B9107

"Check out these **HOT BUYS**"

Buy **any computer** and pick up Symantec's Norton Utilities and/or Norton AntiVirus for **HALF-PRICE!**

$33.00
CDW 90890

$34.09
CDW 90888

Must be on same invoice as computer purchase. Offer valid through 9/30/97 or while supplies last. Restrictions may apply; call your CDW account manager for details. Promotional packaging; product appearance may differ.

DW® offers toll-free technical support for life of your PC.

800-767-4239

www.cdw.com/pwl

©1997 CDW® Computer Centers, Inc.

Circle 68 on reader service card

PCW3205I 10/97 200 N. Milwaukee Avenue, Vernon Hills, IL 60061

CDW

EVERYTHING you need TO run your business

We picked the premier programs in five essential categories, from accounting and business planning to project and contact management.

EDITED BY MELISSA RIOFRIO

BUSINESS MANAGERS don't turn prematurely gray for nothing. On a typical day, they might juggle budgets, staff and client problems, and project schedules all before lunch.

It's a daunting job, especially for small-business owners, who tend to wear many hats—or even for managers within big businesses, who may lack some resources. But there is help.

You may not be able to afford accounting and human-resources staffs, but you can certainly spare a few hundred dollars (or less) for the latest business management software. We've picked 22 programs in five essential categories: accounting, business planning, contact and personal information management, project management, and human resources.

No software can completely replace a professional in the field, but our Best Buys' terrific features and user-friendly interfaces can handle routine chores very well. Among accounting packages, Peachtree Software's Peachtree Complete Accounting Plus Time and Billing lets a growing company connect multiple users over a network, and Intuit's QuickBooks Pro is a simple solution for smaller businesses. Of the business planners, Jian's BizPlanBuilder Interactive best helps entrepreneurs write professional-caliber plans. We recommend Lotus Organizer 97 for intuitive PIM features, and GoldMine Software's GoldMine 3.2 if you need networkable, full-fledged contact management. Microsoft Project 4.1 is our pick among project managers, and we chose three human-resources Best Buys: Avantos Software's Review Writer for employee evaluations, and KnowledgePoint's Descriptions Now for job descriptions and Policies Now for company manuals. We've also listed the best Web sites for getting more information on a variety of business issues.

Who knows—these applications may just give you a bit more free time to do something really wild. Like go out to lunch. ▶

ILLUSTRATIONS BY MICHAEL KLEIN

Inside

178 Accounting
180 Business Planning
184 Contact Managers/Personal Information Managers
190 Project Management
192 Human Resources

H.R.
PROJECTS
CONTACTS
PLANNING
ACCOUNTING
IN

Accounting

BY THERESA W. CAREY

SOUND MONEY management is essential for small businesses, but few have the luxury of hiring an accountant. Luckily, you can do 90 percent of the work yourself with one of the four strong programs reviewed here: BestWare's MYOB Premier, BytePro's Time & Profit 2.0 for Windows, Intuit's QuickBooks Pro 5.0, and Peachtree Complete Accounting Plus Time and Billing. These programs go beyond simple checkbook tracking to offer inventory management, time-and-billing features, financial reports, and customizable forms. They even let you develop a budget, then see how you're doing in comparison to the plan and to last year's performance.

No program can replace a CPA. You'll need someone to check the books and help with taxes. If you still keep receipts in a shoe box, consider a basic package such as Peachtree's One-Write Plus.

In the end, two accounting products here achieved Best Buy status by combining broad appeal and good value. QuickBooks Pro is a great choice if all you need is a single-user package that demands very little financial know-how on your part. If you want lots of accounting features that you can share across a network, Peachtree Complete Plus Time and Billing narrowly edges out MYOB Premier.

MYOB Premier

PRO: Easy to use, good inventory management, subscription-based support includes unlimited upgrades and technical help

CON: No time and billing functions, no per-incident technical support service

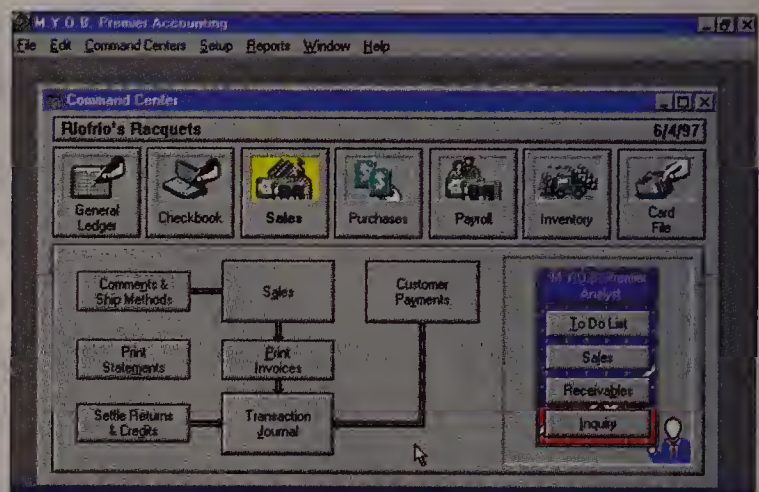
PRICE: initial license $449; $99.95 per user to add more than three simultaneous users

Are you ready for a commitment? MYOB Premier demands one, but for a reasonable price. This multiuser version of BestWare's flagship MYOB package lacks time and billing, a feature that's available in Peachtree Complete Plus Time and Billing. Otherwise, however, it's full-featured, with many items that are missing from the approachable but less powerful QuickBooks Pro. For instance, it offers back-order processing—crucial for wholesalers and other inventory-based businesses.

As for the commitment part, MYOB Premier charges a yearly subscription for full-service support. With most accounting programs you either can pay a flat fee for a year's worth of phone support, or you can pay for calls and upgrades on an individual basis. However, with MYOB Premier you pay $2495 per year to get unlimited, toll-free help and software upgrades—or you get no support at all after the first six months. This may sound extreme, but it could pay off over time compared to the nickel-and-dime hassle of some support plans.

Despite its comprehensive feature set, MYOB Premier is easy to use even for novices. To navigate, you pick a module from MYOB's Command Center; within each module you can choose individual tasks from a flowchart. Program navigation could be more flexible, though: It's largely mouse oriented, and some screen functions have no keyboard equivalents. Considering that using an accounting package requires so much keyboard data entry, it would be nice to have the option of ignoring the mouse. *BestWare, 800/322-6962, www.bestware.com*

READER SERVICE NO. 647



WHEN YOU PICK a module in MYOB Premier, a flowchart appears so you can go straight to the process you need.

Best Buys

HOW MANY challenges do *you* face during a typical workday? The more that get thrown at you, the more you need the right business software. These nine Best Buys can take some of the stress out of everything from day-to-day bookkeeping to making the case for new corporate ventures.

ACCOUNTING

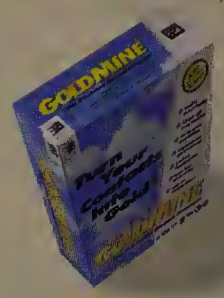
Peachtree Complete Accounting Plus Time and Billing Among multiuser accounting packages, Peachtree's $249 system shines for its customizable reports and new time and billing module.

ACCOUNTING

QuickBooks Pro It's a single-user package only, but for small and home-based businesses the $199 QuickBooks is about as easy as accounting ever gets.

BUSINESS PLANNING

BizPlanBuilder Interactive This $99 package's detailed, straightforward template and other resources can take much of the grunt work out of building a compelling business plan.



CONTACT MANAGERS

GoldMine 3.2 for Windows 95/NT 4.0 Need to share schedule, prospect, and customer information with colleagues across a LAN or over the Internet? For $180, GoldMine is a top choice.

Peachtree Complete Accounting Plus Time and Billing

PRO: Lots of features, very customizable

CON: Cramped screens

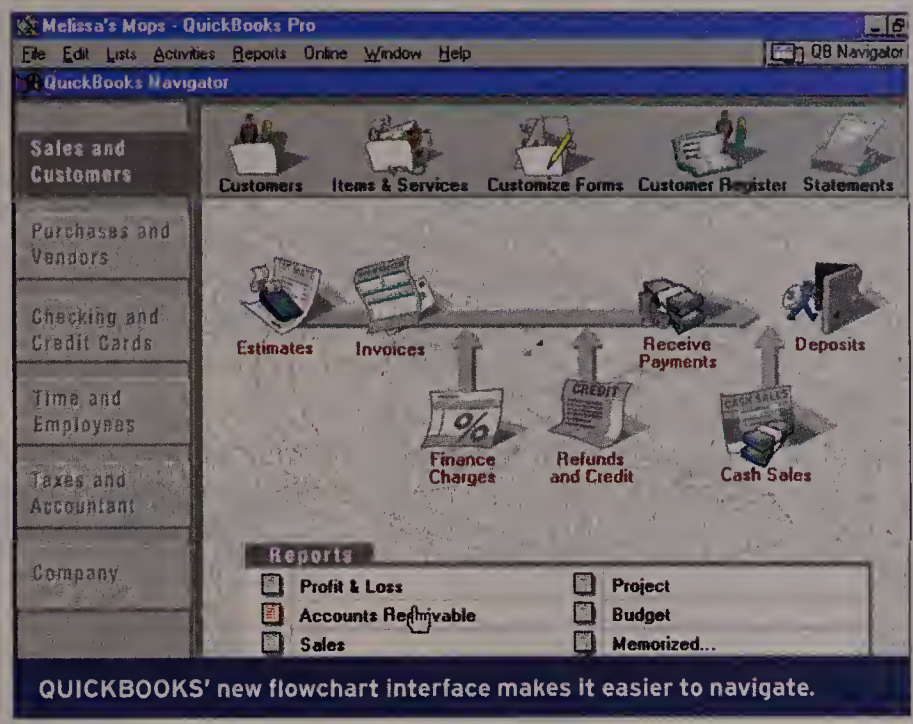
PRICE: $249

Until MYOB Premier came along, Peachtree Complete was the only low-end multiuser accounting package. Both programs are good choices, but Peachtree Complete is our Best Buy pick among multiuser packages, mainly because it's less expensive and includes a time and billing module.

Navigating through the program is easy—you go from tabs on the main screen to flowchart views of each module. However, the charts don't give you access to some functions, such as reports related to time and billing. Also, the densely packed screens could confuse some users.

Service-based businesses that use Peachtree Complete can link employee time cards to both payrolls and invoicing—no more trying to import data from elsewhere or manually rekeying the data. And unlike MYOB Premier's reports, all those in Peachtree Complete can be customized; you can even create groups if you want to print a particular set regularly, such as month-end financial data. An extra-cost module, the $129 Business Internet Suite, helps you set up shop on the Web and then transfer transactions generated on the Web site directly into the accounting program. *Peachtree Software, 800/228-0068, www.peachtree.com*

READER SERVICE NO. 648



QUICKBOOKS' new flowchart interface makes it easier to navigate.

QuickBooks Pro 5.0

PRO: Great remodel of a good entry-level program, simple setup and navigation

CON: Fewer tools than other programs here

PRICE: $199

The new version of QuickBooks Pro looks different from previous ones, but it still fulfills the same need: managing money with a minimum of hassle for small or home-based, service-oriented businesses that have few or no inventory needs.

Installing QuickBooks went flawlessly in our tests. If you opt to install Netscape Navigator, you'll get immediate access to Intuit's Web site for business advice and program updates.

QuickBooks has always avoided accounting lingo whenever possible, and it's even easier to find your way through this version, which switched from a tabbed-folder interface to flowcharts similar to MYOB Premier's. The new Accountant Review lets you continue using the program while a CPA makes data adjustments.

Unlike Peachtree Complete and MYOB Premier, QuickBooks is a single-user package—a drawback for growing businesses (a multiuser version is planned). And Time & Profit will work better if you bill hourly, in part because QuickBooks can't report on hours that have gone unbilled. However, for small, service-based businesses that simply need general accounting, QuickBooks Pro fits just right. *Intuit, 800/446-8848, www.intuit.com*

Time & Profit 2.0 for Windows

PRO: Does a good job of managing a strictly service-based business

CON: No inventory management, floppy-based installation is clunky

PRICE: single user $179, five-user license $485

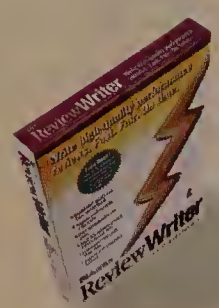
BytePro's Time & Profit is a hybrid time-and-billing and accounting program aimed at law firms and other ▶

PIMS

Lotus Organizer 97 This $79 PIM looks so much like a traditional paper planner that even the most faithful of Filofax junkies will be able to make the switch to PC-based time management.

PROJECT MANAGERS

Microsoft Project 4.1 Despite its high $469 price, Project's profusion of wizards and lack of jargon make it a winner for keeping big jobs on time and within budget.



HUMAN RESOURCES

Avantos Review Writer Conducting a thorough and fair employee evaluation is a little less of a challenge with this $49 package's simple interface and good advice.

HUMAN RESOURCES

KnowledgePoint Descriptions Now With its thousands of customizable job descriptions, the $129 Descriptions Now enables you to document job responsibilities without starting from scratch.

HUMAN RESOURCES

KnowledgePoint Policies Now Complete this $129 product's on-screen survey, and it will generate a professional employee manual that you can print out or put on your company's intranet.

businesses that sell services on an hourly basis. It's much less complex than its major competitor, Timeslips—and unlike Timeslips, Time & Profit includes some accounting tools, so you don't have to export billing data to another package. However, since Time & Profit lacks inventory processing, it's not for businesses that sell products as well as services.

Time & Profit's floppy-based setup seems clunky compared to installing from a CD-ROM, but otherwise our installation went smoothly. Law firms will find it especially easy to set up and use, as it uses the American Bar Association task codes.

Using Time & Profit is simple. You can enter clients, jobs, tasks, and employees on the fly, and each timekeeper can maintain a calendar that can be shared across a network. Items on your to-do list can be converted to billing records with a couple of keystrokes. One valuable report displays unbilled time accumulated by employees, so a manager can keep tabs on productivity. For strictly service-based businesses that want to integrate time and billing with accounting, Time & Profit offers enough of both to do the job right. *BytePro, 800/713-5322, www.bytepro.com*

READER SERVICE NO. 649

Top Accounting Web Sites

✦ **CPAssociates Seminars, www.cpassoc.com/core.asp** Schedule of nationwide seminars on picking the right accounting program.

✦ **Harcourt Brace Professional Publishing, www.hbpp.com** Publisher's site for news articles, tax-code research, reference and advisory resources, and links for accounting and other business finance topics.

✦ **Quicken Financial Network, www.quicken.com/site_map.html** Omnibus site with news and information on accounting and related financial products, services, and industries.

✦ **Rutgers Accounting Web, www.rutgers.edu/Accounting/raw/main1.htm** Rutgers University accounting department's site references accounting organizations and educational programs.

✦ **Small Business Accountants of America, www.sbaa.com** A nationwide referral service that can match accountants to small businesses.

Business Planning

BY MIKE HOGAN

YOU HAVE a great idea that will make millions—but lenders and investors won't buy into it unless you present a good business plan. If you don't have the money to hire a consultant or the time to start from scratch, a business planning program can help.

Every business plan requires certain standard information, such as an exhaustive narrative of your track record, the strategy for your new venture or expansion, and current financial statements and projections. A business planning program assists with gathering data and formatting it for professional results.

Our Best Buy is Jian's thorough yet simple BizPlanBuilder Interactive. Also reviewed: American Institute for Financial Research's Small Business Plan 5.22, Business Resource Software's Plan Write 4.0 and Expert Edition, and Palo Alto Software's Business Plan Pro 2.0.

BizPlanBuilder Interactive

PRO: Template is easy to follow and has plenty of room for quick customization

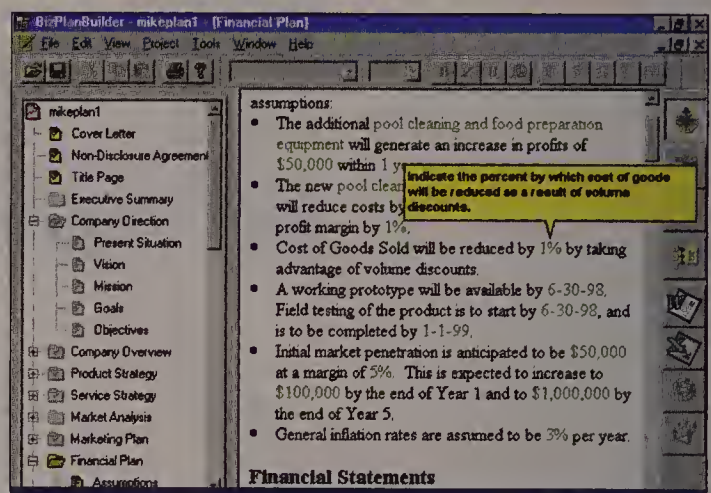
CON: Could use a few more templates

PRICE: $99

Jian's BizPlanBuilder Interactive is our Best Buy because it cuts through the complexity of developing a plan and helps you produce slick-looking results. Its exhaustive template walks you through every step from cover letter to appendix, with plenty of samples. Key information is hot-linked—for example, you type your company name just once to have it appear in 60 places. BizPlanBuilder also offers a better collection of financial tables, ratios, and projections than any competitor.

If templates aren't your style, BizPlanBuilder will guide you through building your own plan from scratch. Jian also maintains a network of advisers on its Web site—attorneys, CPAs, and business consultants—one of whom you can engage to review your work or handle unique situations. Put this product high on your list if you want to start a new business or expand what you already have. *Jian, 800/440-5426, www.jianusa.com*

READER SERVICE NO. 650



BIZPLANBUILDER'S DEFAULT view is a screen full of editable text with color cues showing where to type your information.

Business Plan Pro 2.0

PRO: Flexible interface, a variety of templates

CON: Sample plan text and financials are somewhat spare and not well linked to other areas

PRICE: $99

The text and tables in Palo Alto Software's Business Plan Pro are neither as detailed nor as varied as those in BizPlanBuilder, but this easy-to-use package may do the job for relatively simple businesses.

The flexible interface lets you start from scratch or pick from several customized sample plans. Unlike many planners, it also allows you to pick a model that mixes products and services. You can work on your plan by using a wizard that breaks the process into ten major steps; or you can use a collapsible outline of the plan. However, repeated information isn't hyperlinked, and there's no search-and-replace function, so a revision requires fixing every instance manually. *Palo Alto Software, 800/229-7526, www.palo-alto.com*

READER SERVICE NO. 651

Plan Write 4.0 and Plan Write Expert Edition

PRO: Expert Edition analyzes your draft

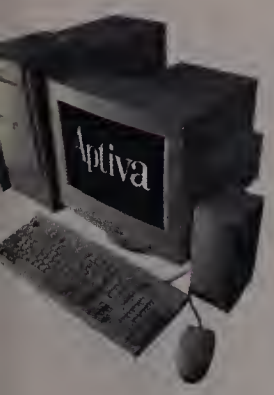
CON: No plan templates, Expert Edition is pricey

PRICE: version 4.0 $130, Expert Edition $229 ▶

You'll be amazed at what they come with. And even more impressed by what they go for.

IBM®

Direct from IBM®



Aptiva™ E Series - E34

Powerful, Yet Surprisingly Affordable

- 233MHz[1] Processor
- 32MB SDRAM
- 4.3GB[2] HD
- K56 Flex Protocol Modem[3]
- 256K L2 Cache
- 24X (max) variable speed CD-ROM
- SRS 3D Sound
- ATI Rage II+ Graphics Accelerator
- MPEG-1 Video
- Lotus® SmartSuite® 97
- Internet Browsers

$1699* $60/Mo[4]

14" Color Monitor (13.1" viewable) add $249
15" Color Monitor (13.6" viewable) add $349

Aptiva L Series - L31

The Ideal Family Multimedia System

- 15" Color Monitor (13.6" viewable)
- 233MHz Intel Pentium® Processor with MMX™ Technology
- 32MB SDRAM
- 4.2GB HD
- K56 Flex Protocol Modem
- 24X (max) variable speed CD-ROM
- MPEG-1 Video
- Sound by Bose®
- Arcade level 3D Graphics/Video
- Exclusive Aptiva Photo Director™ from IBM and Kodak®
- Exclusive IBM ScrollPoint™ Mouse
- EZ Button Keyboard
- Internet Browsers
- Lotus SmartSuite 97
- World Book Encyclopedia and more[5]

$2329 $83/Mo

Aptiva S Series - S62

The Award-Winning Split System Design with the Ultimate in Multimedia

- 15" Color Monitor (13.6" viewable)
- 266MHz Intel Pentium II Processor with MMX Technology
- 32MB SDRAM
- 6.4GB HD
- K56 Flex Protocol Modem
- 512K L2 Cache
- DVD II with Movie Playback
- Sound by Bose
- ATI 3D Rage Pro
- Exclusive Aptiva Photo Director from IBM and Kodak
- Exclusive IBM ScrollPoint Mouse
- EZ Button Keyboard
- Internet Browsers
- Lotus SmartSuite 97
- World Book Encyclopedia
- MechWarrior Mercenaries and more

$3529 $125/Mo

Now when you purchase a new Aptiva, you can join IBM Owner Privileges,™[6] an exclusive membership program that delivers preferred service, unique advisory information, and special deals on accessories and software.

FREE Lexmark™ 1000 Color Printer
with the purchase of an Aptiva system and monitor when you order direct from IBM.[7]

To order directly from IBM, call:

1 800 426-7235, ext. 4263

Or visit us at www.ibm.com

Other Models Available
30-Day Money-Back Guarantee
Award-Winning IBM Service & Support
1-Year Limited Warranty

We're open 8am–10pm Monday–Friday, 9am–5pm Saturday (Eastern Time).

*Price represents Aptiva E34, monitor sold separately. IBM price. Retailer prices may vary. Prices do not include shipping and applicable taxes. Available only in the U.S. and Puerto Rico. PCs referenced in this advertisement ship with an operating system. [1]MHz only measures processor internal clock speed, not application performance. Many factors affect application performance. [2]GB=one billion bytes. [3]K56 Flex modems are designed to be capable of receiving data at up to 56Kbps from K56 Flex-compatible service provider, and transmitting data at up to 33.6Kbps. Service providers currently limit maximum download speeds to 53Kbps. Actual speeds depend on many factors and are often less than maximum-possible. [4]Financing available on approved credit issued and administered by MBNA America Bank, N.A. Payments based on 36-month term and 15.99% annual percentage rate. Estimated monthly payments do not include shipping and taxes. Payments may be deferred for the first 90 days. Ask your IBM representative or call 1-888-495-6262 for details. Terms are subject to change. [5]Software may not include all documentation or function and may differ slightly from retail versions. Not all products may be available separately. [6]Owner Privileges is available exclusively to Aptiva owners. First-year membership fee of $100 is waived for purchasers who purchase and register their Aptiva from 9/15/97 to 3/1/98. Membership is valid for one year from date of purchase. Membership renewal may be purchased for $20 annually. [7]Offer expires 12/1/97 or while supplies last. Offer valid with purchase of current IBM Aptiva E, L, S models. Not valid with purchase of refurbished models. Offer not valid with any other offer, promotion or discount directly from IBM. IBM and Aptiva are trademarks, registered trademarks or service marks of International Business Machines Corporation. Pentium and MMX are trademarks or registered trademarks of Intel Corporation. Other company product and service names may be trademarks, registered trademarks or service marks of their respective owners. Warranty, service and support of non-IBM products are provided directly to you by non-IBM manufacturer, supplier or publisher of the product. IBM makes no representations or warranties regarding non-IBM products. Some limitations apply. Call 1-800-772-2227 to obtain a copy of IBM's statement of limited warranty. ©1997 IBM Corporation.

Seeing is Believing.

(fish not included!)

See Us At

COMDEX Fall '97

Sands Expo
Booth# S2544

Be part of the scene with SHINHO monitors! Produced in ISO 9001 certified factories, SHINHO monitors provide complete user-friendly adjustments and set new standards for Value in Technology. Our AV2 monitors are true "Plug-n-Play," right out of the box! Add our 3-year Limited Warranty on parts and labor, and you have the best value in monitor technology available today. Call *toll free* 1-888-4-SHINHO (474-4646) to see all the believable details.

SHINHO

Value in Technology™

(888)4-SHINHO

(888)474-4646

16200 A Carmenita, Cerritos, CA 90703
Tel: 562-802-8116 • Fax: 562-802-7637
Internet: http://www.shinhousa.com
E-mail: shinho@shinhousa.com

Circle 207 on reader service card

"Move Over, Norton, Enter Nuts & Bolts"

– Windows Sources, June 1997

"Tops Norton's Utilities"
– PC Magazine, June 24, 1997

"A winning program"
– PC World, July 1997

Introducing **NUTS & BOLTS**, *the new package of brilliant, virtually automatic utilities that* PREVENT *crashes,* OPTIMIZE *your hard drive,* ELIMINATE *conflicts,* REPAIR *damage,* SECURE *files,* SHRED *sensitive stuff,* ALERT *you to problems,* RESCUE *lost files,* DIAGNOSE *your system,* INCREASE *speed,* FIX *glitches, and* CHECK *program compatibility.*

Like a nerd in a box

NUTS & BOLTS *does all this almost invisibly. It's like having your own resident nerd – only better. 'Cause it's there before you need it and whenever you need it. And it costs about fifty bucks. Yeah, $50!*

Guaranteed...

NUTS & BOLTS *is guaranteed. If you don't like it, return it within 60 days and get your money back.*

Whaddya got to lose? Without **NUTS & BOLTS** *only time, money, your job, your diploma, your tax return, the great American novel, or your surefire screenplay.*

So put this magazine down this instant and get **NUTS & BOLTS**. *It'll save you over and over and over again.*

ture	NUTS & BOLTS	Symantec Norton Utilities™
y Integrated with Central Interface	YES	—
s damaged drives and files	YES	YES
omated Clean & Repair Windows Registry	YES	Minimal
uild & Optimize Registry for max. speed	YES	—
mize Hard Drive (N&B is up to 5x faster)	YES	YES
n up Hard Drive	YES	YES
vides Detailed System Info	YES	YES
ergency Rescue & Recovery	YES	YES
dware Diagnostics	YES	DOS only
tem Monitor	YES	YES
sh Recovery	YES	YES
sh Protection	YES	—
y System Configuration	YES	YES
Unzip files	YES	—
Integrated with file and Hard Drive Cleanup	YES	—
n Security Encryption	YES	—
urity Integrated with File Compression	YES	—
ure Erase Feature	YES	—
Decrypting Files for easy e-mailing	YES	—

PC Computing ★★★★

Windows Sources 1997 EXPERTS' CHOICE

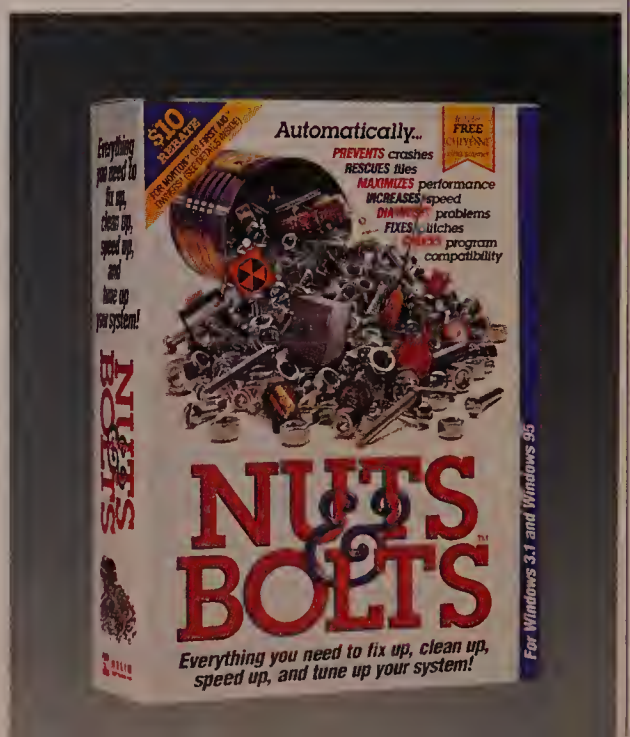
HOME OFFICE COMPUTING BEST BUY May 1997

1-800-451-0551

NUTS & BOLTS *is another amazing, invisible, affordable, lifesaving product from the wonderful brains at HELIX.*

HELIX SOFTWARE CO.

Internet: http://www.helixsoftware.com
Phone: 718-392-3100



©1997 Helix Software Co. All rights reserved. Nuts & Bolts and Disk Tune are trademarks of Helix Software Co. All other trademarks are held by their respective companies. "The Honeymooners" – Courtesy of CBS, Inc.

We can't recommend Plan Write 4.0 or the new Expert Edition because neither offers a customizable sample plan; you have to provide your own text and numbers. The higher-priced Expert Edition does analyze your answers to the interview, audit your plan, and suggest fixes when the numbers don't jibe. But its financial tables and ratios, while varied, aren't as detailed as BizPlanBuilder's. Unless auditing is essential, there's no reason to use a program that gives you less and costs more. *Business Resource Software, 800/423-1228, www.brsinc.com*

READER SERVICE NO. 652

Smart Business Plan 5.22

PRO: Slick interface, plenty of formatting options

CON: Anemic templates

PRICE: $99

Smart Business Plan 5.22 has a flexible, tabbed-folder interface that's easy to use, and it can handle a business that combines both products and services. Beyond that, however, we couldn't find much of substance. The ad hoc examples are thin, and you must copy them into your plan a page at a time—a clunky approach. Our Best Buy costs the same and offers tons more canned content plus additional and better features. *American Institute for Financial Research, 800/578-9000, www.smartonline.com*

READER SERVICE NO. 653

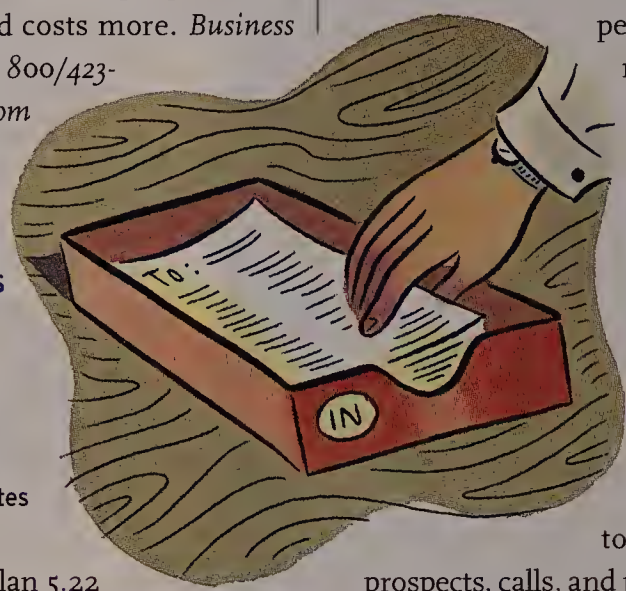
Top Business Planning Web Sites

- **Excite Business and Investing Channel, www.excite.com/xdr/Business/** Web search engine subdirectory with links to sites that offer business planning advice, how-to's, and sources of finance.
- **Idea Cafe's Financing Your Business, www.ideacafe.com/getmoney/** Offers pages and pages of business financing tips and money sources.
- **MoneyHunter, www.moneyhunter.com** Advice, contacts, and business planning templates from *Money Hunt*, a PBS program devoted to entrepreneurial finance.
- **The VINE (Venture Information Network for Entrepreneurs), www.thevine.com** An online mall where businesspeople can meet, share information, and find financing, services, and products.

Contact Managers/PIMS

BY MIKE HOGAN

GOOD CONTACTS make your business go round. Fortunately, there has never been a shortage of software to help you handle your schedule and your contacts with Very Important People. These products fall into two general categories: personal information managers and contact managers. A low-cost, easy-to-use PIM like our Best Buy Lotus Organizer 97 ($79) fits the bill if you just need to get a handle on your calendar and address book. But to track customers, prospects, calls, and promises, you need a full-featured contact manager such as GoldMine 3.2 for Windows 95/NT 4.0, our other Best Buy. At $180 it's about twice as expensive as Organizer, but it gives you more ways to link and report on contact information.



Act 3.0 for Windows

PRO: Well designed and powerful

CON: Group tools aren't as good as those in GoldMine, subpar tech support

PRICE: single user $169, five users $845

Among contact managers, Act 3.0 is a close second to GoldMine, our Best Buy. Sales and marketing pros will appreciate the way this package lays out its tools so the right one is always at hand. Act 3.0 is slightly easier to use than GoldMine, and it lets you share contacts, calendars, and to-do lists across a local area network or over an intranet. However, Act still can't beat GoldMine's powerful networked sales management and order-reporting features—important tools for collaborative work.

In addition to the traditional split-screen view, Act offers a spreadsheetlike view that lets you see just a few fields in a whole lot of records. This is helpful when you want to print a simple list of names and phone numbers. It also supports Caller ID, so it can go directly to a caller's contact record.

We had bad luck with Symantec's tech support; we were on hold for a long time (on our dime), and neither support rep we spoke with knew much about Act. *Symantec, 800/441-7234, www.symantec.com*

READER SERVICE NO. 654

Ecco Pro 4.01

PRO: Comprehensive contact and schedule management, great tech support

CON: Difficult to learn—and there's no tutorial

PRICE: $99, five-unit license $450

Are you already superorganized? Do you have a clear vision of the people, projects, and deadlines swirling around you? If so, you might like Ecco Pro. It's powerful and flexible, but not for the faint of mind.

Ecco Pro is a sophisticated tool for groups who work on long-term projects. It uses a complex outline view that handles everything from calendars and phone books to project management exotica such as Gantt charts. Practically any bit of information can be linked to another. For instance, you can attach to a team leader's name the names of people on the team, plus application files, notes, and schedules. But all this power is tough to master, and the program doesn't focus on sales and marketing issues. Phone book fields aren't as detailed as those in Act or GoldMine, and there's no reporting. *NetManage, 425/885-4272, www.netmanage.com*

READER SERVICE NO. 655

GoldMine 3.2 for Windows 95/NT 4.0

PRO: Fullest-featured contact manager for a LAN- or intranet-based workgroup **CON:** No list view, tech support is hard to reach

PRICE: single user $180; five users $671

GoldMine is our Best Buy for workgroups, especially those heavy into sales support and management. It not only provides all the ▶

IN A SMALL BUSINESS, IT'S JUST YOU AND

YOUR WORK.

But there's help.

Introducing the HP OfficeJet Pro 1150C.

It prints.

It copies.

It scans.

All-in-One.

All-in-Color.

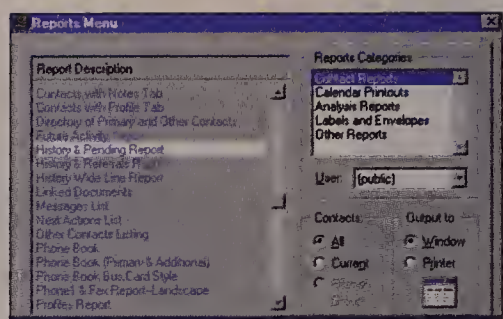
All for $899*.

HEWLETT PACKARD

Visit us at www.hp.com/go/officejet-pro

*Estimated U.S. retail price.

usual record-locking and security options necessary for group use, but it also does the best job of using e-mail and the Web to streamline projects and keep your clients happy. The intuitive interface employs the kind of organization you might have if you kept folders on your desk, but it does not give you Act's list view.



GOLDMINE OFFERS a battery of preformatted reports to track your sales.

The latest version of GoldMine includes a truly rich Internet e-mail program that can hold its own with Eudora. GoldMine can be your de facto intranet server, too: Using special e-mail attachments, far-flung workgroup members can synchronize their contact databases for the price of a local phone call to an Internet service provider. Our only problem was the voice-mail hell you have to endure to get to GoldMine's otherwise solid technical support staff. *GoldMine Software, 800/654-3526, www.goldminesw.com*

READER SERVICE NO. 656

Lotus Organizer 97

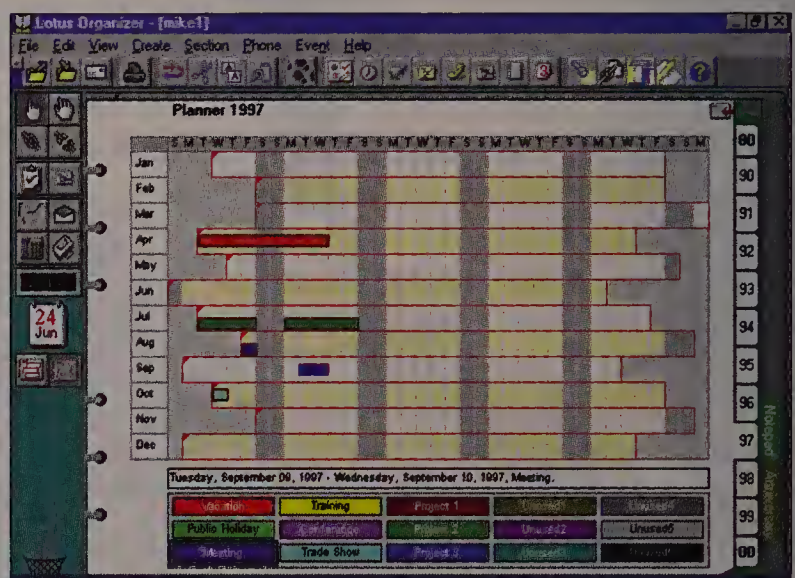
PRO: Great general-purpose PIM, users can share information over a LAN

CON: Not suitable for heavy-duty contact tracking,; horrible tech support

PRICE: $79

If you're new to PIMs and dread letting go of your paper planner, Lotus Organizer 97 offers a comfortable transition into PC-based time management. There it is in colorful 3D—a big six-ring binder with tabbed views of your calendar, to-do list, address book, auto-dialer, planner, notepad, and even a handy personal reminder list. It's the familiar Day-Timer look right down to the sound of turning pages.

As an interface, this is all very intuitive and cool, but Organizer is best suited for casual users, not for high-powered salespeople. That's because it doesn't offer sales and telemarketing tools to compete with the ones in Act and GoldMine. Those packages have much more powerful linking features, track calls automatically, and produce group sales reports.



CLICK A TAB in Organizer's Planner, and you can mark a block of days for meetings, training, or other categories.

Organizer is so easy to use, though, that it gets our Best Buy recommendation despite some of the worst phone support we've ever encountered. When someone can't explain a product that's as simple as this one—and can't transfer you to somebody who can—it's time for a major staff overhaul. *Lotus Development, 800/343-5414, www.lotus.com/organizer*

READER SERVICE NO. 657

Maximizer 97is

PRO: Good telemarketing package with some Internet-oriented extras

CON: Not very flexible

PRICE: $139

Maximizer 97is is designed with sales professionals and telemarketers in mind. You can launch a call by dragging and dropping a record onto the appropriate icon. Dialog boxes lead you from autodial to annotating and timing the call to scheduling follow-up on your calendar.

Unfortunately, the program's only reporting option shows all contact data, so you can't create focused reports. Worse, you can edit contact information only by using a highly structured three-page form. To Maximizer's credit, its support staffers are knowledgeable, although we had trouble reaching them. *Maximizer Technologies, 800/804-6299, www.maximizer.com*

READER SERVICE NO. 658

Office 97
Tuned for Small Business

WHEN I THINK of Office 97, the first things that come to mind are that it's a hard drive hog and that those Office Assistants can be annoying. But I have to admit, Office 97's Small Business Edition sweeps those objections aside. Why? Because its Small Business Financial Manager gives small-business managers the analytical tools to play CFO even if they don't have the penthouse office.

Small Business Financial Manager complements your existing accounting package, taking imported data and analyzing it in ways that program can't. For instance, it can detail by month your current and quick cash ratios, your inventory turns, and your return on total assets. You can explore the condition of your payables, receivables, and inventory or find the break-even point and the point of diminishing returns for new products or services. Financial Manager lets you work out answers to questions like, What if I sell assets? What if I add a loan? What if I lease instead of buy?

Importing data from your accounting program is easy, thanks to Small Business Financial Manager's data converters for the top dozen small-business accounting applications. Pop-up help and tutorials teach you the significance of each element as you go along—it's sort of a home-study MBA.

Dozens of other Small Business Edition tools and templates help you run your company: the Avery printing wizard, add-ons that tune Access and other programs for small-business use, even a guide to doing business on the Internet. But Financial Manager makes its presence felt right where you live, on your P&L. —**Mike Hogan**

✦ **WHERE TO BUY:** Office 97 Small Business Edition, $499; Microsoft, 800/426-9400, www.microsoft.com

READER SERVICE NO. 659

TATE OF THE ART
MAS 90 ACCOUNTING SOFTWARE

"As one of the South's largest distributors of fresh produce and eggs, speed is an important part of everything we do.

"That's why we chose MAS 90® Client/Server for our accounting software. Hard to believe, but it actually delivers the performance of UNIX® while interfacing perfectly with all our existing desktop applications.

"In fact, it only took us two weeks to be convinced. I switched off the UNIX box and never looked back.

"And talk about efficient — MAS 90cs lets us see the profit for each delivery, and where to put our efforts. All in minutes, instead of hours. Plus, now we do our daily closeouts from start to finish in under two minutes. And thanks to live links, MAS 90cs automatically updates reports every time component data changes.

"It's fast, it's reliable, it's hands-off. And in a fast-moving business like ours, that lets me spend less time in the office.

"And more time in the field."

Since 1981, at State Of The Art we've been making award-winning accounting software for a wide range of platforms and businesses.

To learn more, you can call 1-800-854-3415, or access our web site at www.sota.com.

Or just ask Dexter Odom.

BUSINESSWORKS MAS 90 ACUITY FINANCIALS

"Analyzing our per-delivery profits used to take hours. With MAS 90 Client/Server, we can do it in under 10 minutes – in Windows. That keeps our financial data fresh."

Dexter Odom
Owner
Dexter's Farm

Microsoft SOLUTION PROVIDER

1997 High-End Accounting Package Juried Shootout New Jersey Society of CPA's

©1997 State Of The Art, Inc. All product names are trademarks of their respective companies.

To develo
we painstakingly stud

Your life.

©1992 Compaq Computer Corporation. All rights reserved. Compaq [illegible] patent and trademark office. [illegible] products mentioned may be trademarks or registered trademarks of their respective companies.

While creating monitors requires a certain proficiency in the sciences, it also helps to know a few things about people. Like that some can effectively manage large MIS departments while fighting an addiction to the ESPN SportsZone web site. Or that others have dinner with a computer more often than with a significant other. Our philosophy of innovation is based on how all of us work, how we live. It's the force behind every monitor we make.

monitors this advanced, a very complex system.

The P110, the first 21" (19.5" viewable) Trinitron monitor in existence, is designed for artistic souls whose ideas are simply too big for a smaller screen. The TFT500 flat panel is extraordinary in its ability to fit neatly into confined spaces, like a corner office rampant with paper piles and golf equipment. The P50 and V70 offer the performance and value you'd expect from the best-selling brand of monitors on earth. They also offer the highest refresh rates in their class. A comforting thought for those of us who associate a mere 40-hour work week with part-time employment.

More and more the world is being seen through a monitor. We invite you to enjoy the view. We're at www.compaq.com/products/monitors/.

COMPAQ

Project MANAGEMENT

BY MIKE HECK

ORGANIZING a project by making lists, lists, and more lists is a time-honored but imperfect method of staying on track. Project management software can do much more: It can create charts to keep tabs on progress, calculate the effect of delays, and help manage people, funds, and material as you plan each stage of a project.

Our Best Buy, Microsoft Project, is worth the high price because its wizards speed complex scheduling and planning. SureTrak is a close second; it's jargony, but it allocates resources better.

Microsoft Project 4.1

PRO: Easiest to use, includes essential planning tools, good collaborative features

CON: Lacks sophisticated schedule and resource management functions

PRICE: $469

Although it's the most expensive product here, the $469 Microsoft Project earns a Best Buy. It has nearly everything you'd want in a project manager, and it's very easy to use.

Wizards and cue cards guide you through building typical projects, such as a product launch. Most commands and windows forgo jargon and focus on everyday images, like showing a wall calendar in the Calendar view. In more complex areas, like the Gantt timeline, wizards step in when you try to connect tasks in ways that don't fit your schedule. The Resource view helps you balance team members' assignments, but it has fewer options than SureTrak—if you lose one worker to the flu, the program won't help you substitute someone of equal experience.

Unless you need the more advanced resource and budgeting features of SureTrak, Microsoft Project is a better choice, especially for novices. *Microsoft, 800/426-9400, www.microsoft.com/project*

READER SERVICE NO. 660

Milestones, Etc. 5.0

PRO: Fine charting tool and linking features

CON: No resource management

PRICE: $179

Kidasa's Milestones, Etc. offers basic project management that could work for you if you want scheduling features but need little or no budgeting and resource management. You enter every step of a project into the program's outliner, then click and drag to indicate every step's duration. You can link tasks and see the schedule's duration change as individual task times are modified.

It's too bad that not everything about Milestones, Etc. is so easy. The figures that drive graphs must be entered by hand. There is also no way you can link resources directly to a task. *Kidasa Software, 800/765-0167, www.kidasa.com*

READER SERVICE NO. 661

SureTrak Project Manager 2.0

PRO: Superior scheduling and resource control

CON: Requires some project management experience

PRICE: $399

SureTrak came in a close second behind Microsoft Project. It has some better features, but it's not quite as easy to use.

The program has a front end that goes beyond Microsoft-style wizards to get you thinking about all aspects of a plan, including potential obstacles. However, understanding SureTrak's on-screen forms and menus requires some project management experience.

Unique among its competitors, SureTrak can key tasks for each team member to colored bands on a chart, making it easy to gauge your workload even if the tasks are spread throughout a project. The Spotlight tool highlights tasks, such as everything that must be completed during a certain week. Unless you need SureTrak's more sophisticated resource and budgeting features, however, you're better off with Microsoft Project. *Primavera Systems, 800/973-1335, www.primavera.com*

READER SERVICE NO. 662

TurboProject 1.0

PRO: Inexpensive, handles large jobs well

CON: Jargon heavy, few customizing options, built-in reporting is limited

PRICE: $99

Despite its low price, TurboProject 1.0 is actually the best of the group at handling very large projects. It's also versatile in special situations, such as altering billing rates. Unfortunately, the program's dialog boxes and menus are heavy with technical terms like "lag time." And it's not very customizable; you can't alter the look of Gantt chart bars, and there are few report formats. Version 2.0, which may be available by the time you read this, will offer improved reporting and a tree-style project view, according to the vendor. *IMSI, 800/833-8082, www.imsisoft.com*

READER SERVICE NO. 663

Top Project Management Web Sites

- **Center for International Project & Program Management, shaw.iol.ie/~mattewar/CIPPM/** Articles and links to research and news about upcoming events.
- **Project Management Institute, www.pmi.org** A nonprofit association's site, featuring online publications, forums, and education programs.
- **Project Manager's Control Tower, www.4pm.com** Links to some 1500 Web pages, most related to project management. A Virtual Project Office contains templates and similar aids.
- **Project Management World Wide Web Site, www.projectmanagement.com** Offers downloadable utilities, a help area, and links to other Web resources.
- **ProjectNet, www.projectnet.co.uk** Has news, utilities, and demos, and a directory of training resources, software vendors, and consultants.
- **WWW.Project Management Forum, www.synapse.net/~loday/PMForum/** Sponsors live events and promotes project management standards, including certification programs.

Power up with a 300MHz Pentium® II processor workstation and exceed the speed limit.

There is no limit to DTK's commitment to providing your business with the latest innovations in PC technology. Like our new APRI Series. These power-packed workstations feature a 300 MHz Pentium® II processor with Intel 440FX PCIset, or the 440LX PCIset. They deliver uncompromising speed and performance. Manage Windows® NT with ease and handle every power-demanding task on your agenda. From big-time number crunching financial applications to desktop publishing to Auto CAD jobs. To get your business up to speed, contact your reseller. Or call 1-800-BUY-A-DTK (1-800/289-2385).

MMX™ intel inside pentium® II PROCESSOR

APRI-74M/K300 with 440FX PCIset

- 300/266/233 MHz Pentium® II processor
- 512KB L2 Cache
- Up to 512MB EDO RAM (ECC supported)
- Matrox Millennium II 3D graphic card with up to 16MB WRAM
- Seagate 6.4GB IDE or 9GB Wide SCSI Hard Drive

APRI-76M/K300 with 440LX PCIset

- 300/266/233 MHz Pentium® II processor
- 512KB L2 Cache
- Up to 512MB SDRAM
- Matrox Millennium II AGP graphic card to support high performance 3D graphics
- Ultra DMA supported

DTK Computer

www.dtkcomputer.com

See us at Booth #3633 COMDEX Fall '97

Boston 617/932-3800	New York 908/562-8800	Washington, D.C. 703/222-9194	Atlanta 770/279-1385	Miami 305/597-8888	Pittsburgh 412/373-6750	Cleveland 216/349-1995	Chicago 847/593-3080
Indianapolis 317/546-8805	Milwaukee 414/679-7870	Minneapolis 612/557-1973	Kansas City 913/492-3800	Dallas 972/484-8535	Houston 281/568-6688	Scottsdale 602/451-6774	Los Angeles 626/810-0098

The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corp. Windows NT is a trademark of Microsoft Corp. © 1997 DTK Computer, Inc.

Circle 87 on reader service card

Human RESOURCES

BY THERESA W. CAREY

HUMAN RESOURCE issues may be the thorniest concerns a manager faces. None of the programs here can guard against every staff problem, but they can greatly simplify writing job descriptions, personnel manuals, and employee reviews. Although they're designed to be easy enough for nonprofessionals, even HR specialists will welcome timesaving features like on-screen interviews that generate text based on your responses.

Three programs we reviewed are Best Buys: KnowledgePoint's Descriptions Now 3.01, for job descriptions; the same company's Policies Now 5.02, for employee manuals; and Avantos's Review Writer 3.0, for employee evaluations.

Avantos Review Writer 3.0 for Windows

PRO: Well-designed program guides you step by step through creating a review

CON: Sample text sounds unnatural

PRICE: $49

Review Writer earns a Best Buy because it helps you write a complete employee performance review; and unlike Performance Now, it can audit your work for problems. Using the QuickBuild feature, you can rapidly rate an employee for analytical thinking, written communications, and other factors. The program then provides canned text that fits your assessments. Indeed, this text fits so well, you may let it enter your document without revision—which could make for a slightly impersonal report.

Review Writer's charm is that it's part consultant: It checks your document for completeness and audits the text for possible legal ramifications before they cause trouble. *Avantos Performance Systems, 800/282-6867, www.avantos.com*

READER SERVICE NO. 664

Descriptions Now 3.01

PRO: Easy to use, lots of job descriptions

CON: Can't print an org chart based on the reporting structure

PRICE: $129

Descriptions Now—available separately or in a $269 suite that also includes KnowledgePoint's Performance Now and Policies Now—lets you easily create job descriptions for your company, drawing from a database of thousands. You select a title, then customize the text using the built-in word processor. You can also establish a reporting structure (something Review Writer doesn't allow).

KnowledgePoint also offers its entire job description database on the Internet (www.jobdescription.com) at $7.95 per description—a great option if you need one pronto and don't want to learn a whole new program. *KnowledgePoint, 800/727-1133, www.knowledgepoint.com*

READER SERVICE NO. 665

EmployeeManualMaker 3.0

PRO: Well-done documents, helpful user guide

CON: Must export text to a word processor

PRICE: $139

Jian's EmployeeManualMaker is a collection of manual templates that you open in your word processor, then edit to your specifications. Unlike Policies Now, this package doesn't guide you through putting the manual together through an interview, nor does it generate a table of contents or an index. While it contains well-worded and legally sound documents, customizing the package takes work. Even a professional HR manager wouldn't want to hassle with these templates when Policies Now does the same job much more smoothly. *Jian, 415/254-5600, www.jianusa.com*

READER SERVICE NO. 666

Performance Now 3.02

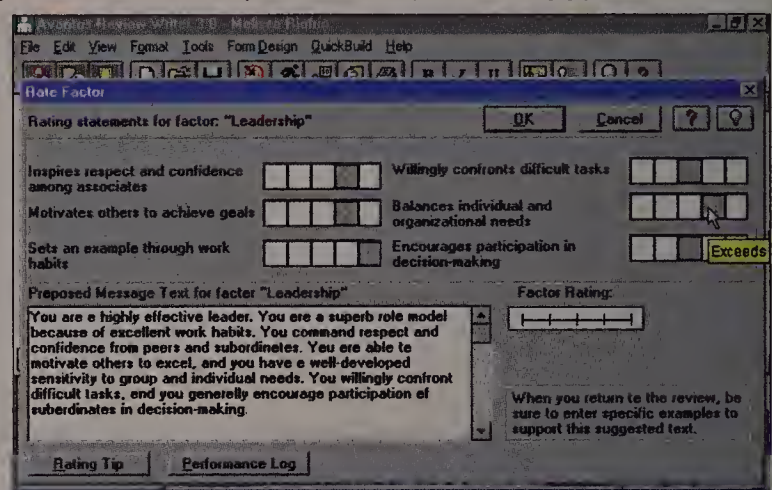
PRO: Builds an evaluation quickly and elegantly

CON: Template customizing is a pricey option

PRICE: Standard edition (single user) $129

Performance Now 3.02 lets you quickly write employee evaluations based on Description Now's job descriptions. Using the description's criteria, you rank an employee for a variety of tasks and characteristics. The program then inserts general text that reflects your ratings, which you can easily edit. A $995 add-on module lets you customize the templates with specific wording. *KnowledgePoint, 800/727-1133, www.knowledgepoint.com*

READER SERVICE NO. 667



REVIEW WRITER'S QUICKBUILD feature helps you develop document content.

Policies Now 5.02

PRO: Builds manual via easy interview

CON: None

PRICE: $129

Policies Now offers a better way to develop an HR manual than EmployeeManualMaker's templates. You answer questions about your company by clicking buttons. When you finish the survey, you're awarded with a professionally worded policy statement, all the necessary manual components, and a table of contents and an index. You can edit the content or the index terms, and even publish the manual on an intranet. *KnowledgePoint, 800/727-1133, www.knowledgepoint.com*

READER SERVICE NO. 746

Theresa W. Carey, Mike Heck, and Mike Hogan are freelance writers, and Melissa Riofrio is an associate editor for PC World.

For more information about all products in this article, circle reader service number 905. ■

Online

FOR MORE INFORMATION, including a look at the best packages for helping your organization with legal issues, visit PC World Online at www.pcworld.com/oct97/business_apps.

Juiced Up.

Call now to order.
800-249-1176
www.micronpc.com

MICRON ELECTRONICS™

CONFIGURED FOR YOUR LIFE

Pick Micron.

We've got the best computers in the bunch.

At Micron, we know you want the freshest technology out there. So our engineers are continually devising new ways to make our award-winning PCs smarter, faster and more fun. Whether you use your computer for home or business, we've got a system for you. And you'll never find a lemon in the bunch. Our components go through rigorous quality-assurance testing, and all Micron™ products conform to the highest industry certification standards.

When you pick Micron, you can custom configure a system that fits your specifications – so it's homegrown, not mass-produced. Pick Micron and you'll get the steadfast 24-hour customer support that we're famous for. And when you pick Micron, you're getting one of the best limited warranties in the business from one of the best companies in the industry.

So pick Micron today. It'll be good for you.

Lots of zing.

The Micron TransPort™ Series. Notebooks with real bite.

What's small, sweet and gives you a lot of punch?

Micron TransPort notebook, of course. Our outstanding line of portable PCs offers impressive flexibility, tempting prices and the hottest features on the market.

High-end users will love our TransPort XKE. A true desktop replacement, we've loaded our XKE with a high-performance graphics accelerator, active matrix screen, upgraded CD-ROM, tons of memory and more. Our TransPort XPE fits the bill if you're looking for a top-grade computer for home, office or travel. And our TransPort VLX offers flexibility and sleek styling for a more-than-affordable price.

Small pack a little punch. Try our TransPort notebooks.

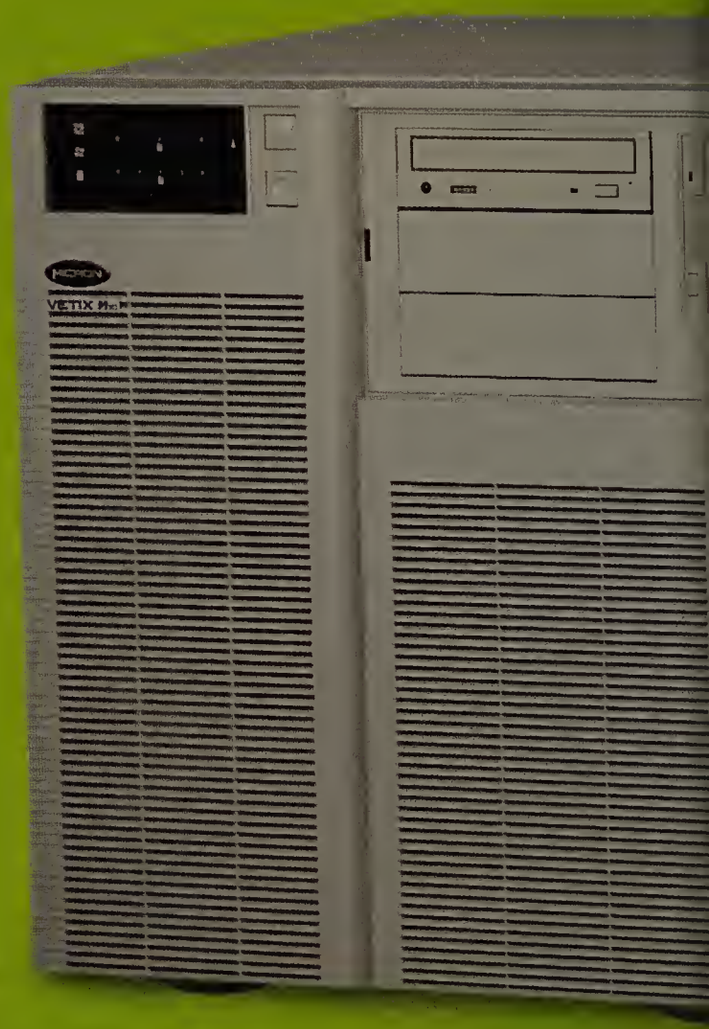
MMX™ intel inside pentium® PROCESSOR

Call now to order.
800-249-1176
www.micronpc.com

MICRON ELECTRONICS ™

CONFIGURED FOR YOUR LIFE

Like peas in a



The Micron Vetix™ and ClientPro® Series. Solutions for a healthy network.

Need solutions for your growing network?

If you can dish it out, our systems can take it. Our ClientPro PCs and Vetix servers effortlessly get yo network running – and keep it running.

We pack our hardy Vetix MXI chock-full of features, like redundant power supplies and high-degr fault-tolerant components including swappable hard drives. And we made our entry-level LXI mod expandable, reliable and tough.

Complement your server with our ClientPro desktops. We've designed them to be easy to set up, easy upgrade and easy to network. That means you reduce potential downtime and lower your total cost ownership. And if you have networking questions – your answers are just a phone call away. That's wh our unwavering customer support is all about.

This powerful pair makes networking easy. And that's a pretty sweet dish.

Business Solutions

ood.

he Micron Powerdigm™ sets a zzling pace.

e Powerdigm XSU revolutionizes the workstation with Micron's gineered and developed Samurai™ chipset. A powerful, Intel-processor ed workstation, the Powerdigm XSU executes demanding business l technical tests with command, and it's flexible enough to run pular PC programs.

cron is the only company to offer the innovative Samurai chipset. th support for dual monitors, dual Pentium® II processors, ultra-wide SI-3 and speedy 10/100 network adapters, the Powerdigm sizzles h features the competition is still dreaming about. You'll see the ults in graphic design, digital imaging, financial analysis, CAD and re. The Powerdigm XSU, featuring the new Samurai chipset, takes rkstation performance to new levels with 66MHz/64-bit PCI, nanced memory and I/O subsystems.

intel inside

PENTIUM®PRO PROCESSOR

Call now to order.

800-249-1176

www.micronpc.com

MICRON ELECTRONICS™

CONFIGURED FOR YOUR LIFE

Extra hot.

The Micron Millennia® Series adds kick.

Our powerful new Millennia XKU packs a Pentium® II processor featuring MMX™ technology, while the Millennia MME has a Pentium processor with MMX technology. Both offer 3D video, MPEG, and 24X EIDE CD-ROM and more - so you can dish up the most intense games and Internet sites.

If you want even more sizzle to your gaming experience, add our Fusion3D option, which includes DVD software, Monster 3D graphics card, AWE 64 PCI sound card and a two speaker satellite with a subwoofer stereo system, plus five intense multimedia computer games.

Now when you buy a Millennia, you can choose one of four feature-packed software bundles to be preinstalled in your system - at no extra cost!

Quicken Financial helps you organize personal finances — from money management to estate planning. Young children learn lots from computer games with the **EdVenture Pack**. Fun titles, fun songs, fun games ... and lots of learning Get your fill of intense multimedia and entertainment applications with the **Multimedia Xcitement** package - call for current titles and details. And the **Home Productivity Pak** offers games and reference tools for the entire family.

One of these four packages is standard with your new Millennia. Additional bundles are only $69 each, as is the upgrade to our Academic Bundle, which includes useful references and information for students.

Or, upgrade to our Small Business Essentials package for only $249. This must-have bundle for small businesses includes titles you can use every day.

Hot enough for you?

MMX™ intel inside pentium® PROCESSOR

Sweet deals.

MICRON CLIENTPRO MTE

Intel 166MHz Pentium processor with MMX technology
32MB EDO RAM
2.1GB SMART EIDE hard drive
15" Micron 500FGx, .28dp (13.7" display)

STANDARD FEATURES

512KB pipeline burst cache, flash BIOS, DMI Support
3.5" floppy drive
3Com 3C905 network adapter
Integrated S3 ViRGE/DX graphics accelerator, 2MB EDO RAM
Integrated wavetable sound
Tool-free minitower or desktop
Microsoft Intellimouse
Microsoft Windows 95
Intel LANDesk® Client Manager
5-year/3-year Micron Power limited warranty

$1,549
Bus. lease $53/mo.

MICRON CLIENTPRO XLU

Intel 233MHz Pentium II processor with MMX technology
32MB EDO RAM
2.1 GB SMART EIDE hard drive
17" Micron 700FGx, .26dp (16.0" display)

STANDARD FEATURES

512KB internal L2 secondary cache, DMI support
3.5" floppy drive
16X EIDE variable speed CD-ROM drive
3Com PCI 10/100 ethernet NIC
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
Upgradable wavetable audio with speakers
Microsoft Intellimouse
Microsoft Windows NT Workstation
Intel LANDesk Client Manager
5-year/3-year Micron Power limited warranty

$2,549
Bus. lease $87/mo.

MICRON POWERDIGM XSU

Dual Intel 300MHz Pentium Pro processors
64MB ECC SDRAM
Fire GL 1000 pro 8MB 66MHz PCI Open GL Professional 3D accelerators
4GB Ultra-Wide SCSI-3 hard drive
19" Hitachi SuperScan CM751 (18" display) .26dp color monitor

STANDARD FEATURES

12/20 variable speed SCSI CD-ROM drive
Memory upgradable to 1GB ECC SDRAM
Supports multiple Ultra-Wide SCSI-3 hard drives
DMI, software and hardware management support
Iomega Jaz SCSI drive with 1GB removable cartridge
Wavetable stereo sound with speakers
Fast Ethernet 10/100 PCI network adapter
Microsoft Intellimouse
Microsoft Windows NT® Workstation
5-year/3 year Micron Power limited warranty

$6,199
Bus. lease $195/mo.

MICRON TRANSPORT VLX

133MHz Intel Pentium processor
16MB EDO RAM (40MB max.)
1.4GB hard drive
16X modular CD-ROM drive
Li-Ion battery
121" TFT SVGA, 800x600 display

STANDARD FEATURES

256KB L2 pipeline burst cache
PCI bus with 128-bit graphics accelerator
MPEG compatible
Zoomed video-ready
Touchpad pointing device
Microphone and 16-bit stereo sound
2-way infrared port
Modular floppy drive
Microsoft Windows 95 and MS Plus!
5-year/1-year Micron limited warranty

$2,249
Bus. lease $77/mo.

MICRON VETIX LXI-N SERVER

Intel 200MHz Pentium Pro processor
32MB ECC EDO RAM
2GB Ultra Wide SCSI-3 hard drive
15" Micron 15FGx, .28dp (13.7" display)

STANDARD FEATURES

Dual Pentium Pro ZIF sockets
256KB integrated L2 cache
Memory upgradable to 1GB (8 DIMM slots)
5 PCI, 2 ISA, 1 shared ISA/PCI, 9 drive bays
Integrated Adaptec PCI Ultra-Wide SCSI-3 controller
Integrated Intel EtherExpress™ Pro 100 controller
Integrated SVGA graphics
12X SCSI-2 CD-ROM drive
3.5" floppy drive
Dedicated server technical support, 7x24
5-year/3-year Micron Power limited warranty
1-year next-business-day on-site service†

$2,999
Bus. lease $102/mo.

MICRON VETIX MXI SERVER

Intel 200MHz Pentium Pro processor
128MB ECC EDO RAM
Three 4GB Ultra-Wide SCSI-3 hard drives (12GB total)

STANDARD FEATURES

256KB integrated L2 cache
Dual Pentium Pro ZIF sockets
Memory upgradable to 1GB (8 DIMM slots)
8 open expansion slots: 5 PCI, 2 ISA, 1 shared ISA/PCI
Integrated Adaptec PCI Ultra-Wide SCSI-3 controller
Integrated Intel EtherExpress Pro 100 controller
12X variable speed SCSI CD-ROM drive
5 internal, hot-swappable, hard drive array bays (upgradable to 10)
3 external 5.25" media bays
1 (one) 330 watt power supply standard (upgradable to 3 for added redundancy)
Microsoft Windows NT Server 4.0 (10-user license)
Intel LANDesk Server Manager 2.52
Dedicated server technical support, 7x24
5-year/3-year Micron Power limited warranty
1-year next-business-day on-site service†
NOS Support (3 incident resolutions/ 1st year), 7x24

$7,999
Bus. lease $251/mo.

† On-site service for the Vetix server is provided by Digital Equipment Corporation and is optional.

MICRON TRANSPORT XPE

150MHz Mobile Intel Pentium processor with MMX
32MB EDO RAM (80MB max)
1.4GB removable hard drive
12.1" active matrix color display, 800x600

STANDARD FEATURES

256KB L2 pipeline burst cache
PCI graphics accelerator, 2MB VRAM
8X modular CD-ROM drive
Pick-a-Point™ dual pointing devices
Micronphone and 16-bit stereo sound
Motorola Montana 33.6 fax/modem
CardBus- and zoomed video-ready
2 infrared ports, S-video, NTSC, game port
Management and Executive Travel software pak
2 modular expansion bays
Custom nylon carrying case
Microsoft Windows 95 and MS Plus!
Microsoft Office 97 Small Business Edition CDs
5-yr/3-yr Micron Power limited warranty

$3,499
Bus. lease $119/mo.

MICRON TRANSPORT XKE

233MHz Mobile Intel Pentium processor with MMX
48MB EDO RAM
3GB removable hard drive
13.3" TFT XGA display

STANDARD FEATURES

512KB L2 pipeline burst cache
128-bit 2MB DRAM graphics
20X modular CD-ROM drive with AutoPlay™ technology
Pick-a-Point dual pointing devices
Microphone and 16-bit stereo sound
Integrated 33.6 modem, full duplex
CardBus-and zoomed video-ready
2 infrared ports, S-video, NTSC, game/MIDI port, USB
Management and Executive Travel software pak
2 modular expansion bays
Custom nylon carrying case
Microsoft Windows 95 and MS Plus!
Microsoft Office 97 Small Business Edition CDs
5-yr/3-yr Micron Power limited warranty

$5,899
Bus. lease $185/mo.

Performance

MICRON™ MILLENNIA® XKU

Intel 300MHz Pentium® II processor (features MMX™ technology)
128MB SDRAM
8.1GB Ultra ATA hard drive
17" Micron 700FGx, .26dp (16.0" display)

STANDARD FEATURES

82440LX chipset
512KB internal L2 cache, 2MB BIOS
100MB Iomega Zip drive, 3.5" floppy drive
24X EIDE variable speed CD-ROM drive
32 voice wavetable stereo sound, powered speakers with subwoofer
USR Sportster 56K x2 data/fax modem**
AGP 128-bit 3D video with 4MB SGRAM
Microsoft® Intellimouse™, USB connections
Microsoft Windows® 95 and MS® Plus!
Microsoft Office 97 Small Business Edition
Choice of Micron Software Solutions Pak
5-year/3-year Micron Power℠
limited warranty

$3,999
Bus. lease $140/mo.

MICRON MILLENNIA MME 200

Intel 200MHz Pentium processor with MMX technology
48MB SDRAM
4GB Ultra ATA hard drive
17" Micron 700FGx, .26dp (16.0" display)

STANDARD FEATURES

512KB pipeline burst cache, flash BIOS
3.5" floppy drive
100MB Iomega Zip drive
24X EIDE variable speed CD-ROM drive
32 voice wavetable stereo sound with speakers
USR Sportster 56K x2 data/fax modem**
PCI 64-bit 3D video, MPEG, 4MB EDO DRAM
Microsoft Intellimouse, USB connections
Microsoft Windows 95 and MS Plus!
Microsoft Office 97 Small Business Edition
Choice of Micron Software Solutions Pak
5-year/3-year Micron Power
limited warranty

$2,299
Bus. lease $78/mo.

MICRON MILLENNIA LXE 166

Intel 166MHz Pentium processor with MMX
16MB EDO RAM
3.2GB EIDE hard drive
15" Micron 500FGx, .28dp (13.7" display)

STANDARD FEATURES

512KB pipeline burst cache, flash BIOS
3.5" floppy drive
16X EIDE variable speed CD-ROM drive
16-bit stereo sound and speakers
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
Microsoft Mouse, USB connections
Microsoft Windows 95 and MS Plus!
Microsoft Works
Choice of Micron Software Solutions Pak
5-year/3-year Micron Power
limited warranty

$1,499
Bus. lease $56/mo.

MICRON SOFTWARE SOLUTIONS PAKS†

Quicken Financial Pak: Quicken Deluxe 6, Family Lawyer, Parent's Guide to Money, Financial Planner
EdVenture Pak: Thinkin' Things #2, Sheila Rae The Brave, Reader Rabbit's Reading #1, Freddie Fish: Missing Kelp Seeds, Putt-Putt Saves the Zoo
Multimedia Xcitement Pak: (MMX enhanced titles, call for details)
Home Productivity Pak: Family Doctor, Comptons Encyclopedia 1997, Mavis Beacon Teaches Typing, Printshop Ensemble, Net Nanny, Crayola Magic 3D
Academic Bundle: Merriam Webster's Collegiate, Word Smart, Grolliers Encyclopedia, Student Reference Library, Quicken SE, Hoyle Classic Games

Choice of one Solutions Pak with purchase of Millennia system. Pick an additional bundle for only . . .

$69

MICRON FUSION3D OPTION PAK

DVD-ROM*, DVD software
E4 Cool DVD PCI docoder card: 6 channel AC-3 2 channel out capability, SPDIF output (digital audio out)
AWE 64 ISA sound card
Cambridge SoundWorks/MicroWorks
2 speaker satelite with subwoofer stereo system
Monster 3D graphics card with 4MB memory
Fusion3D game pak:
Mech Warrior 2; Mercenaries 3Dfx version, AH-64D Longbow,
U.S. Navy Fighters '97, Command & Conquer, Popular 3Dfx Racing Sim
Microsoft Sidewinder Pro joystick

Available on Millennia MME and XKU systems only.

XKU add $649
MME add $699

Call now to order.
800-249-1176
www.micronpc.com

MICRON ELECTRONICS™

*The CD-ROM drive will be removed upon the purchase of the DVD upgrade.
**Maximum transmission speed of up to 56Kbps when downloading data and 33.6Kbps when uploading. However, actual performance is dependent upon numerous factors and transfer rates may be less than the maximum potentials.
† Available only on Millennia systems with Microsoft Windows 95.

CONFIGURED FOR YOUR LIFE

Appealing options.

MULTIMEDIA OPTIONS

AWE 64 ISA Sound card upgrade	$99
Advent AV270 Powered Partners stereo speakers	$79
Advent AV370 Powered Partners stereo speakers with subwoofer	$199
Microsoft SideWinder 3D Pro joystick	$59
Microsoft SideWinder gamepad	$39

STORAGE/MEDIA OPTIONS

Adaptec 2940U Ultra SCSI Fast-20 controller (upgrade from system with standard Ultra SCSI Fast-20 controller)	$100
Plextor 12/20 Plex 3MB/sec SCSI internal CD-ROM drive (upgrade from system with standard EIDE CD-ROM drive)	$100[1]
Iomega Jaz SCSI drive with 1GB removable cartridge	$299[1]
Iomega ZIP IDE drive with 100MB removable cartridge	$99
Iomega 6-pack of 100MB Zip cartridges	$99
Iomega 3-pack of 100MB Zip cartridges	$49
Sony 4/8GB SCSI DDS-2 tape backup drive with tape and software	$899[1]
Cheyenne ARCserve with InocuLAN (for servers)	$499
Mylex dual channel Ultra-Wide SCSI-3 RAID caching controller with 4MB ECC RAM	$899

COMMUNICATION OPTIONS

33.6 external data/fax modem	$299
56Kbps technology modem**	$99

NETWORKING OPTIONS

3Com 3C509B Etherlink III ISA combo network adapter	$79
3Com 3C900 EtherLinkXL PCI combo network adapter	$99
3Com 3C905 Fast EtherLinkXL 10/100 PCI TPO network adapter	$99
3Com DfficeConnect Hub 8/TPC	$149
3Com OfficeConnect Switch 140	$969

SOFTWARE OPTIONS

Small Business Essentials: QuickBooks, Visio, Norton AntiVirus, Astound, Focal Point, American Yellow Pages	$249
CorelDRAW 7 (full retail version)	$299
Corel WebMaster Suite (full retail version)	$99
Novell Intranetware 4.11, 5-user license, (for Vetix Lxi-N only)	$699

HP PRINTERS

HP DeskJet 692c printer	$319
HP DeskJet 870Cxi printer	$419
HP LaserJet 6Lxi printer	$429
HP LaserJet 6P printer	$799

DISPLAY/VIDEO OPTIONS

17" Hitachi SuperScan CM630 (15.9" display) .26dp color monitor	$100[2]
21" Hitachi SuperScan CM801 (20.0" display) .26dp color monitor	$650[2]
Number Nine Imagine 128 series II video card, 4MB VRAM	$299[3]
Number Nine Imagine 128 series II video card, 8MB VRAM	$549[3]

TRANSPORT OPTIONS

MicronDock™ multimedia port replicator: ethernet 10BT LAN adapter, SCSI-2 port, S-video and NTSC-video output, built-in stereo speakers, infrared port, headphone, microphone, line-in jacks, parallel, serial, VGA and 2 PS/2 ports (with warm dock and built-in game port - available on XPE models only)	$299
Micron Executive™ desktop package: matching black 17"monitor (16.0" display), mouse, mousepad and keyboard (can be used with or without MicronDock)	$699
Motorola Montana 33.6 fax/modem supports regular telephone connections, cellular phones and two-way paging devices	$259

SCANNER OPTIONS

HP Scanjet 5s sheetfed scanner	$209
HP Scanjet 5p flatbed scanner	$309
HP Scanjet 4c flatbed scanner	$759

DESKTOP EXTENDED SERVICE OPTIONS

Optional 1st year on-site service[4] coverage included	
2nd year on-site service[5] coverage	$79
2nd and 3rd year on-site service[5] coverage	$99

Other service options may be available, ask your system consultant

SERVER EXTENDED SERVICE OPTIONS

2nd and 3rd year next-business-day[6] on-site service coverage[5]	$99
4-Hour response[7] on-site service coverage[5] (8am-5pm, M-F), 3 years total	$798
4-Hour response[7] on-site service coverage[5] (24-hours, 7 days per week), 3 years total	$998

Other service options may be available, ask your system consultant

NOTEBOOK EXTENDED SERVICE OPTIONS (Vlx only)

2nd and 3rd year parts and labor[6]; 3-business-day turnaround for 3 years	$269
2nd and 3rd year parts and labor[6]; 7-business-day turnaround for 3 years	$209

OTHER OPTIONS

APC Per7T surge suppressor	$39
APC Pro7T surge suppressor	$59
APC Smart-UPS 700 with PowerChute plus software	$389
APC Smart-UPS 1000 with PowerChute plus software	$529
Microsoft Natural Keyboard (upgrade from standard keyboard)	$49

[1] Requires SCSI host adapter
[2] Upgrade from system with standard Micron 17" 700FGx (16" display) color monitor
[3] Upgrade from systems with standard 64-bit 4MB video card
[4] 1st year on-site service is available in the United States and in limited areas in Canada from third-party service provider per customer's agreement with provider
[5] 2nd year and 2nd and 3rd year offerings are available in the United States only. Extended services, if purchase after system shipment may have a higher cost.
[6] Services will be scheduled, whenever possible, for the next business day after parts are received by the customer.
[7] Available in certain locations, ask your system consultant for details.
Some options and accessories available with system purchase only

*Available only on desktop and notebook systems with Microsoft Windows 95.
**Maximum transmission speed of up to 56Kbps when downloading data and 33.6Kbps when uploading. However, actual performance is dependent upon numerous factors and observed transfer rates may be less than the maximum potentials.

Call now to order.

800-249-1176

www.micronpc.com

MICRON POWER℠ WARRANTY

- 5-year limited warranty on microprocessor and main memory
- 3-year limited parts-only system warranty (1-year for TransPort VLx)
- 1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
- 30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
- 30-day money back policy
- 24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

Micron Sales Hrs: Mon-Fri, 6 am-10 pm, Sat, 7 am-5 pm (MT) Technical Support Available 24 Hours A Day, 7 Days A Week Toll free from Mexico: 95-800-708-1755 Toll free from Canada: 800-708-1758 · Toll free from Puerto Rico: 800-708-1756 · International Sales: 208-893-8970 · International Fax: 208-893-7393

©1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.

CONFIGURED FOR YOUR LIFE

2D and 3D GRAPHICS BOARDS

You Can't Always Get What You Want

So get what you need. Our tests reveal that few boards deliver 3D performance as impressive as promised, and no one board can do everything well, from battling 3D monsters to getting the real work done.

YOU'VE BUTTONED up your work for the day; now it's time to save the world from aliens. So you grab a joystick, launch into the brand-new game you just bought, and start blasting away with your phasers. But instead of laser beams, all you get are ugly black boxes. What's going on? Better check your graphics card.

Unfortunately, strange glitches in 3D games are typical of some of the latest graphics boards on the market. Every new board promises to blow you away with the coolest, fastest 3D images you've ever seen—but don't believe it. Based on our evaluation of a batch of graphics boards after ▶

by Brad GRIMES

putting them through our new 3D and multimedia tests, we can say that few boards deliver 3D that's as impressive as the vendors promise. We found big differences in the way graphics boards handle video, too. So if you're considering upgrading your board just for these hot new graphics capabilities, beware.

But if all you want is to make sure the board that comes in your new PC is good for business applications like Excel, you're in luck. Our tests showed that just about any board is fine for basic 2D work, particularly at typical resolutions such as 800 by 600. The only significant speed differences you'll find in business applications occur at higher resolutions such as 1280 by 1024. When we tested at this resolution, the fastest graphics board (the Matrox Mystique 220), was 9 percent faster than the slowest board (the Creative Labs' Graphics Blaster 3D, which didn't make our Top 10 chart).

The real truth is that no one graphics board can do it all well—zoom around virtual worlds, play movies, *and* help you get your work done quickly. Some boards, like the Hercules Stingray 128/3D, have great-looking 3D games, but jerky video. On the other end of the spectrum, the Matrox Mystique 220 has the fastest 2D performance, but Direct 3D games look terrible. When you go to pick your graphics board, you're going to have to decide what you most want it to do.

Best BUYS

OUR REVAMPED tests revealed two new Best Buys: ATI's $219 3D Pro Turbo PC2TV and Diamond's $170 Stealth 3D 3000. These two cards do the best job of handling a wide range of applications, from standard business applications to virtual reality. They're not tops at every single type of graphics application, but all in all, they're the best you can find right now for both work and play.

The 3D Pro Turbo is particularly powerful since it has 8MB of SGRAM. It has strong performance in several different areas, including 2D, but it has mediocre AVI video playback. It also has TV-out capabilities. The Stealth 3D 3000 has excellent 2D performance and did well in two of our three subjective game tests. Still, it was one of several boards that botched Fox Interactive's Independence Day game.

TEST-DRIVING GRAPHICS CARDS

FOR THIS expanded version of our monthly Top 10 Graphics Boards, we retested 16 boards from previous Top 10s, priced from $100 to $399. (No new boards were available for testing; for information about beta boards we saw, see "Coming Right Up: Tomorrow's 3D.") In addition to evaluating their installation, software, documentation, support, and performance in business applications, we added challenging new 3D and multimedia tests. You can see the results from these tests in two new scores on this month's Top 10 Graphics Boards chart.

To come up with a 3D score for each board, we conducted frame-rate and subjective tests. Our two frame-rate tests told

GRAPHICS BOARDS FEATURES COMPARISON

	BOARDS	BASICS: Street price (6/2/97)	2D graphics chip	Separate 3D chip	Installed/ maximum video RAM	Video RAM type	RAMDAC speed (MHz)	Maximum refresh rate at 1024 by 768 (Hz)
1	ATI 3D Pro Turbo PC2TV*	$219	ATI Rage II	○	8/8	SGRAM	220	150
2	Diamond Stealth 3D 3000*	$170	S3 Virge/VX	○	4/4	VRAM	220	120
3	ATI 3D Xpression+ PC2TV	$129	ATI Rage II	○	4/4	SGRAM	170	150
4	STB Nitro 3D	$149	S3 Virge/GX	○	4/4	EDO DRAM	170	120
5	Diamond Stealth 3D 2000 Pro	$135	S3 Virge/DX	○	4/4	EDO DRAM	170	100
6	Hercules Terminator 3D/DX	$149	S3 Virge/DX	○	4/4	EDO DRAM	170	120
7	STB Velocity 3D	$199	S3 Virge/VX	○	4/8	EDO VRAM	220	120
8	Matrox Mystique 220	$179	Matrox MGA-1164SG	○	4/8	SGRAM	220	140
9	Hercules Stingray 128/3D	$249	Alliance ProMotion-AT3D	●[1]	4/4	EDO DRAM	180	120
10	Number NineFX Reality 772	$279	S3 Virge/VX	○	4/4	VRAM	220	150

* Best Buy See Top 10 chart, page 289. ● Yes ○ No

[1] 3Dfx Voodoo Rush.

us how smooth and fast a board could run 3D. One test, called Tmark, measured the frame rate on a popular 3D shoot-'em-up, Eidos Interactive's Terracide; another gauged the frame rate of a VRML-based wooden desk as we moved it through 3D space. We also conducted subjective tests on Terracide and two other 3D games, Fox Interactive's Independence Day and Microsoft's Monster Truck Madness. Two staffers took each game for a spin and examined it for realistic-looking 3D graphics.

For our new multimedia score, we kept our old frame-rate test of an AVI video clip running at full-screen, and added two tests that challenge a board's ability to handle animation. We used a programmed script to time how quickly a board could create and run a Microsoft PowerPoint presentation containing several animated text transitions. We then measured frame rates while running a Macromedia Director file containing animations including bouncing balls and spinning globes.

We also expanded our PC WorldBench business application tests by adding a higher resolution. We now test all boards at a resolution of 1280 by 1024 (in addition to 800 by 600 and 1024 by 768).

What did we discover? Among other things, we found that despite the hype, today's 3D is a mixed bag. Some works, some doesn't. A lot can be predicted by the chip a board uses. (For more information on chips, see PC World Online, www.pcworld.com/oct97/graphics.) Most of the boards with S3's popular Virge chip, for example, had driver bugs that made some games virtually unplayable. These boards couldn't do alpha blending correctly, which makes textures translucent. As a result, laser fire and explosions in Terracide were reduced to black boxes. Diamond sent us a fix for its boards' alpha-blending problem; most of the other vendors say they will have a fix by the time you read this.

The best overall gaming board we tested was the Hercules Stingray 128/3D, in ninth place. It gave us the smoothest VRML and 3D game play and the best-looking 3D images of any of the graphics boards that made the chart. The Stingray owes its fine 3D performance to a separate 3D chip and a separate bank of ▶

Coming Right Up: Tomorrow's 3D

SOME NOTEWORTHY 3D boards weren't finished in time for this review, but they should be available by the time you read this. Two boards we saw—one from STB and one from Diamond, both of which are based on a new chip from nVidia—really blew us away. When we tested a beta of STB's Velocity 128 3D, we found that it was fast in 2D and multimedia programs, and its 3D quality was equivalent to that of the Hercules Stingray 128/3D. The best part: It costs only $199. We weren't able to test Diamond's Viper V330, but we were impressed with its 3D quality in a demonstration.

The other important board we saw is the Number Nine Revolution 3D. A next-generation Imagine 128 card, the Revolution 3D includes a lot of 3D gaming features that weren't part of the Imagine 128 line, like filtering. See *New Products* in this issue for the latest on the Revolution 3D.

CLASSIC IMAGES: Boards based on the new nVidia chip can display richly textured graphics, as in this museum image.

VIDEO/3D										USABILITY		
X interpolation/ Y interpolation	TV out	Texture mapping	Separate texture RAM	Perspective correct	3D filtering	Fogging	MIP mapping	Alpha blending	OpenGL drivers	Installation	Documentation	Software utilities
●/●	●	●	○	●	●	●	●	●	○	outstanding	very good	outstanding
●/●	○	●	○	●	●	●	●	●	●	outstanding	good	very good
●/●	●	●	○	●	●	●	●	●	○	outstanding	very good	outstanding
●/●	○	●	○	●	●	●	●	●	○	outstanding	good	good
●/●	●	●	○	●	●	●	●	●	●	outstanding	good	very good
●/●	○	●	○	●	●	●	●	●	○	outstanding	fair	very good
●/●	○	●	○	●	●	●	●	●	○	outstanding	good	good
●/●	○	●	○	●	○	○	●	●	●	outstanding	good	very good
●/●	○	●	●	●	●	●	●	●	○	outstanding	fair	very good
●/●	○	●	○	●	●	●	●	●	○	fair	very good	good

Fault-tolerant constant computing without compromise.

NT performance at a HIGHER LEVEL.

CMOS

Networked computing for the enterprise.

On-Site Servic
CMOS
Guarante
of Quality
Technical Suppo

For a complete copy of our Limited Warrantee, contact CMOS Systems. On-site service provided by an independent third-party provider. May not be available in certain remote areas. Prices and specifications valid in the United States only and subject to change without notice. Intel, the Intel inside logo and Pentium are registered trademarks, and MMX is a trademark of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. ©1997 CMOS Technology, Inc. 3040 Coronado Drive, Santa Clara, CA. Tel: 408-982-0500
CMOS Titan systems are certified by Marathon Technologies for fault-tolerant computing.

CMOS has lowered the cost of a high performance environment for over *a million* users worldwide.

As one of only a few computer manufacturers to develop and support complete client/server environments, CMOS has the experience, products and people to keep your Windows NT™ servers, workstations and desktops running at peak performance, and with maximum uptime.

In addition to dozens of "off-the-shelf" quick-ship configurations, CMOS can meet your precise requirements from laptops, desktops and entry-level file management systems to high-end clusters and fault-tolerant systems with Hot Swap & RAID capabilities.

Take a closer look at the top performers in network-ready, high availability NT solutions, call CMOS today.

From enterprise class server to desktop system to network-ready laptops, interoperability is a CMOS hallmark. Build the system that's right for you.

Enterprise Server

CMOS TITAN TQ6400

2x 200MHz Pentium Pro Processors (Expandable to Quad Processors)
128MB ECC EDO Memory (1GB Max.)
512KB Integrated L2 Cache per processor
2PCI Ultra/Wide SCSI-3 controllers
3x4GB Ultra/Wide SCSI-3 Hard Drives
16XSCSI CD-ROM Drive
DPT Dual Channel Ultra/Wide SCSI-3 RAID caching w/4MB RAM
Intel PRO/100B PCI adapter
8 Expansion Slots: 5 PCI 3 EISA
Intel LanDesk Server Manager v2.8
3 Year Limited Warranty, 1Year On-site Service
Life-time dedicated server hardware technical telephone support

$11,550
Business Lease: $393/month

Workgroup Server

CMOS MOUNTAIN MI6300

300MHz Pentium II Processor (Expandable to Dual Processors)
128MB ECC EDO Memory (512MB Max.)
512KB Integrated L2 Cache
PCI Ultra/Wide SCSI-3 controller
9GB Ultra/Wide SCSI-3 Hard Drive
16XSCSI CD-ROM Drive
Intel PRO/100B PCI adapter
Intel LanDesk Server Manager v2.8
3 Year Limited Warranty, 1 Year On-site Service
Life-time dedicated server hardware technical telephone support

$5,950
Business Lease: $203/month

Departmental Server

CMOS MOUNTAIN MI6266

266MHz Pentium II Processor (Expandable to Dual Processors)
64MB ECC EDO Memory (512MB Max.)
512KB Integrated L2 Cache
PCI Ultra/Wide SCSI-3 controller
4GB Ultra/Wide SCSI-3 Hard Drive
16XSCSI CD-ROM Drive
Intel PRO/100B PCI adapter
Intel LanDesk Server Manager v2.8
3 Year Limited Warranty, 1 Year On-site Service
Life-time dedicated server hardware technical telephone support

$4,250
Business Lease: $145/month

Advanced Applications Workstation

CMOS Signature SD6266

266MHz Pentium II Processor (Dual Processor Capable)
64MB ECC EDO Memory (512MB Max.)
2GB Ultra/Wide SCSI-3 Hard Drive (7200 RPM)
Matrox Millenium II PCI with 4MB Video Memory
24X EIDE CD-ROM Drive
Sound Blaster Compatible Audio
3Com 10/100MB Fast EtherLink XL
Factory Installed Windows NT 4.0 with 1 Year Telephone Support
17" Monitor (15.9" v.i.s.)
3.5" Floppy Drive
3 Year Limited Warranty, 1Year On-site Service
Life-time dedicated hardware telephone support

$3,550
Business Lease: $125/month

Financial Services Dual Monitor Workstation

CMOS Signature SD6300

300MHz Pentium II Processor (Dual Processor Capable)
64MB ECC EDO Memory (512MB Max.)
4GB Ultra/Wide SCSI-3 Hard Drive (7200 RPM)
APPIAN Jeronimo J2 Graphics Card
24X EIDE CD-ROM Drive
Sound Blaster Compatible Audio
3Com 10/100MB Fast EtherLink XL
Factory Installed Windows NT 4.0 with 1 Year Telephone Support
Two 17" Monitors (15.9" v.i.s.)
3.5" Floppy Drive
3 Year Limited Warranty, 1Year On-site Service
Life-time dedicated hardware telephone support

$5,250
Business Lease: $179/month

3D Graphics Workstation

CMOS Signature SD6300D

300MHz Pentium II Processor (Dual Processor Capable)
64MB ECC EDO Memory (512MB Max.)
2GB Ultra/Wide SCSI-3 Hard Drive (7200 RPM)
ELSA Gloria-L/MX Graphics Card
24X EIDE CD-ROM Drive
Sound Blaster Compatible Audio
3Com 10/100MB Fast EtherLink XL
Factory Installed Windows NT 4.0 with 1 Year Telephone Support
20" Monitor (19.0" v.i.s.)
3.5" Floppy Drive
3 Year Limited Warranty, 1Year On-site Service
Life-time dedicated hardware telephone support

$6,050
Business Lease: $206/month

MMX™ intel inside pentium® II PROCESSOR

Call toll free 1-888-413-CMOS
(1-888-413-2667)
MON-FRI: 7am-9pm SAT: 9am-5pm SUN: 10am-3pm (PST)

www.cmos.com

All systems include a 3-Year Limited Warranty. All servers and workstations can be custom configured. All Servers are tailor made for specific need. Rack mount solution available. Call for latest notebook prices.

Circle 33 on reader service card

memory that helps move bit-mapped textures (such as wood) onto 3D scenes more quickly.

Are you looking for a board that will make your multimedia presentations look good? Our number one Best Buy, the ATI 3D Pro Turbo PC2TV with 8MB of SGRAM, was the fastest at creating and running our PowerPoint presentation. How about our Macromedia Director animation test? Scores for this test were bunched, but the number two Best Buy, Diamond's Stealth 3D 3000, lead by a hair. Fewer boards did as well when running AVI video. Six of the 16 graphics boards tested—including the number one ATI 3D Pro Turbo—dropped so many frames that the video was choppy. But several of the boards, including the Diamond Stealth 3D 3000, played our clip flawlessly at a full 30 frames per second.

FOLLOW THE BOUNCING BALL: Our Macromedia Director test measured a board's ability to run multimedia smoothly.

FUTURE GRAPHICS

A TECHNOLOGY YOU CAN EXPECT to see on the horizon is the Accelerated Graphics Port, a new system bus that links a graphics board directly to your PC's main memory. The direct link is expected to help graphics boards move large texture maps onto your screen more quickly, giving you smoother game play. AGP-compliant PCs and graphics boards should appear on store shelves in early 1998.

When you buy a new 3D board, also check to see if it comes with OpenGL drivers. OpenGL is an application programming interface that software developers might use more because Microsoft's Direct3D API has been disappointing. Direct3D was supposed to allow any PC to run any 3D software, but some developers have found it difficult to work with. A few graphics boards in our Top 10 chart, like the number two Diamond Stealth 3D 3000, come with OpenGL drivers.

It's clear that graphics boards have a long way to go before 3D, video, and animation look as good as the business applications you use most. What's more, as 3D technology becomes more advanced, it will be up to software developers to design good-looking, high-quality programs that really take advantage of it. Until then, you'll have to determine which type of graphics is most important to you and buy your board accordingly. ▶

TOP 10 GRAPHICS BOARDS — TEST REPORT

	BOARDS	3D: Slower–Faster	Terracide quality	Monster Truck Madness quality	Independence Day quality	Multimedia: Slower–Faster	PowerPoint time at 1280 by 1024 (seconds)[1]	PC WorldBench: Graphics score at 800 by 600[1]
1	ATI 3D Pro Turbo PC2TV*		good	good	good		249	193
2	Diamond Stealth 3D 3000*		outstanding	outstanding	poor		267	194
3	ATI 3D Xpression+ PC2TV		fair	fair	good		278	188
4	STB Nitro 3D		poor	fair	fair		278	195
5	Diamond Stealth 3D 2000 Pro		good	good	poor		261	195
6	Hercules Terminator 3D/DX		poor	good	poor		272	190
7	STB Velocity 3D		poor	fair	good		275	191
8	Matrox Mystique 220		fair	fair	poor		272	192
9	Hercules Stingray 128/3D		outstanding	good	good		278	187
10	Number NineFX Reality 772		poor	good	fair		268	193

*Best Buy — 3D: Frames per second 0 20 40 60 — Multimedia: Frames per second 0 30 60 90

VRML test — Tmark 3D game test — Macromedia Director test — AVI video playback test

[1]We run PC WorldBench and PowerPoint tests at three resolutions but report only the resolution that has the greatest range.

HOW WE TEST All tests were performed under Windows 95 OSR2 on a Dell Dimension XPS P133c with 32MB of EDO DRAM and 256K of pipeline-burst secondary cache. If a board's install program did not correctly install the most current version of DirectX, we used DirectX 3.0. We set the refresh rate to 75 Hz where possible; tests run at 1280 by 1024 resolution were run at 60 Hz. We tested each board as supplied by the manufacturer using PC WorldBench 1.0, plus a separate script for Microsoft PowerPoint, at 800 by 600 and 16.8 million colors, 1024 by 768 and 65,536 colors, and 1280 by 1024 and 65,536 colors. We ran the Macromedia Director test at 800 by 600 and 65,536 colors. We ran the AVI video playback test using Microsoft ActiveMovie at 800 by 600 and 16.8 million colors and received CPU usage information from System Monitor. We ran the VRML test from the hard drive using Netscape Navigator with the VREAM VRML plug-in at 800 by 600 and 65,536 colors. The Tmark test was created by Eidos, the developer of Terracide, to determine frame rates in that game. Subjective evaluations of 3D game quality were done on Terracide, Microsoft's Monster Truck Madness, and Fox Interactive's Independence Day, all of which we ran at 640 by 480 and 65,536 colors.

Run Windows Anywhere.

With the Velo handheld PC, carrying your work around has never been easier. It runs Microsoft Windows CE and pocket versions of Word, Excel and Internet Explorer. And with its built-in modem, you have everything you need to access e-mail, send faxes and surf the Web. Now you can work just the way you work on your office PC, no matter where you happen to be.

For more details on the product that's won awards from PC Magazine and Byte magazine, call 1-888-FOR-VELO or visit our Web site at www.velo1.com.

Let's make things better.

PHILIPS MAGNAVOX

© 1997 Philips Electronics North America Corporation. Velo is a registered trademark of Philips Electronics. All other names are either registered trademarks or trademarks of their respective owners.

Circle 181 on reader service card

DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max[§] Variable CD-ROM Drive ◆ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ◆ Microsoft Windows 95 ◆ Microsoft Mouse (MS IntelliMouse on XPS Systems) ◆ 2 Universal Serial Bus (USB) Ports ◆ 3 Year Limited Warranty[†] with 1 Year On-site[Δ] Service ◆
Upgrades: ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $99. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ APC Back-UPS Pro 650, add $299. ◆ 3 yrs. On-site Service, add $99.

NEW DELL DIMENSION® XPS D300
300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 128MB SDRAM, add $499.*

$3499

Business Lease[◊]: $123/Mo.
Order Code #500909

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*

$2899

Business Lease: $105/Mo.
Order Code #500908

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- AWE64 Value Sound Card
- Altec Lansing ACS-90 Speakers

★ *Upgrade to an 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $99.*

$2499

Business Lease: $90/Mo.
Order Code #500907

DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 4MB WRAM Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to a 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2199

Business Lease: $79/Mo.
Order Code #500906

CUT COSTS.

DELL DIMENSION DESKTOPS FOR HOME

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max[§] Variable CD-ROM Drive ◆ *NEW* 56K Capable** U.S. Robotics x2 WinModem ◆ MS Home Essentials plus Best of Entertainment Pack ◆ Microsoft Windows 95 ◆ MS IntelliMouse ◆ 3 Year Limited Warranty with 1 Year On-site Service
Upgrades: ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3-Pak of Zip 100MB Cartridges, add $39. ◆ HP DeskJet 820Cse Color Printer, add $299.

NEW DELL DIMENSION XPS D300
300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- AWE64 Value Sound Card
- Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$3799

***NEW* Personal Lease: $169/Mo.[◊Ø]**
Order Code #500904

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-290 Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$2999

***NEW* Personal Lease: $134/Mo.[◊Σ]**
Order Code #500903

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Ultra ATA Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to Altec Lansing ACS-290 Speakers with Subwoofer, add $75.*
★ *Upgrade to 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2399

***NEW* Personal Lease: $107/Mo.[◊∞]**
Order Code #500902

DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Nitro 4MB EDO PCI Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to a 64MB SDRAM, add $199.*
★ *Upgrade to 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $79.*

$1999

***NEW* Personal Lease: $89/Mo.[◊π]**
Order Code #500901

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

†Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P. Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ∞ 20X Max./11X Min. Ω12X Max./8X Min. §24 Max./12X Min. **x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ††Advertised configuration varies from tested configuration. ^4MB Baseboard with a 4MB Upgrade Module. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

◊Amount of monthly lease payment, based on 24-month lease from Dell Financial Services L.P., an independent entity; amount due prior to delivery: Ø$338; Σ$268; ∞$214; π$178 (amounts exclude taxes which may vary; for example, Hartford City, IN fees Ø$8.45); no security deposit required, subject to credit approval and availability. Lease terms subject to change.

ELL DIMENSION M200a
0MHz PENTIUM PROCESSOR
ITH MMX TECHNOLOGY

mmon features listed above plus:
16MB SDRAM Memory
3.2GB Hard Drive (12ms)
800HS Trinitron Monitor
(13.7" v.i.s., .26dp)
2MB EDO ViRGE 3D Video
3Com 3C509B EtherLink III
10Mbit ISA Combo Card
lomega Zip 100MB Internal Drive
with One Cartridge
Upgrade to 32MB SDRAM, add $99.
Sound Blaster 16 PnP and Altec Lansing ACS-90 Speakers, add $89.

$1799

usiness Lease: $65/Mo.
der Code #500905

SOFTWARE DESCRIPTIONS

MS Office 97 Small Business Edition (SBE) includes:
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

MS Home Essentials plus Best of Entertainment Pack (available on desktops only) includes:
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0
- TETRIS, Taipei, SkiFree, Dr. BlackJack and more.

DELL POWEREDGE SERVERS

Common features: ◆ 512KB Integrated L2 ECC Cache ◆ Integrated PCI Ultra-Wide SCSI-3 Controller ◆ Intel® Pro/100B PCI Ethernet Adapter ◆ Intel LANDesk® Server Manager v2.5x ◆ **3 Years Next Business Day On-site Service**

DELL® POWEREDGE® 2200 SERVER
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 64MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- MS Windows NT® Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

$4749

Business Lease: $166/Mo.
Order Code #250081

DELL POWEREDGE 2200 SERVER
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- MS Windows NT Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

★ *APC Smart-UPS 700w Power Supply, add $399.*

$3749

Business Lease: $134/Mo.
Order Code #250085

NOT CORNERS.

DELL LATITUDE NOTEBOOKS

Common features: ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts CD-ROM (20X Max°° Variable on LM M166ST or 12X Max^Ω Variable on LM M133ST), 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

DELL LATITUDE® LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 72MB EDO RAM
- *NEW* 4GB Hard Drive
- MS Office 97 Small Business Edition

★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*
★ *3Com Lan+ 33.6 Modem PC Card, add $299.*
★ *Dell Latitude LM Port Replicator, add $159.*

$3999‡

Business Lease: $141/Mo.
Order Code #800168

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB EDO RAM (72MB Max)
- 2.1GB Hard Drive
- Motorola 33.6 Fax Modem
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB EDO RAM, add $299.*
★ *Upgrade to a NEW 4GB Hard Drive, add $349.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*

$3499‡

Business Lease: $123/Mo.
Order Code #800169

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB EDO RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *NEW 56K Capable** x2 Modem, add $149.*
★ *Dell Latitude LM Port Replicator, add $159.*

$2899‡

Business Lease: $105/Mo.
Order Code #800140

NEW DELL LATITUDE LM M133ST
133MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 24MB EDO RAM, add $99.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Nylon Carrying Case, add $69.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *3Com 10Base-T Network Card, add $129.*

$2599‡

Business Lease: $94/Mo.
Order Code #800154

Call for details on Dell's Business Leasing and new Personal Leasing programs.

TO ORDER TOLL-FREE
888-617-9685
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03308

DELL®

1 ATI 3D PRO TURBO PC2TV

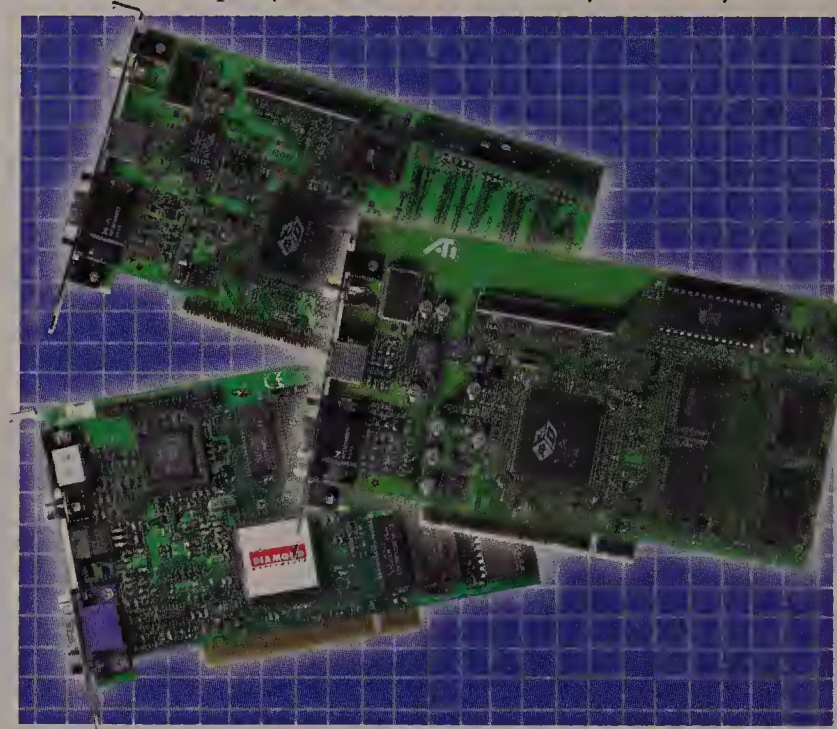
PRO: Outstanding overall multimedia performance, good 3D.

CON: Mediocre AVI playback, no toll-free support.

VALUE: This is the Best Buy to get if you're big into graphics.

The ATI Pro Turbo PC2TV is one of only three boards on the chart to top $200, but when you consider that you get 8MB of SGRAM, it's a bargain—especially for graphics professionals. When it comes to graphically intense multimedia and 3D programs, the extra power on this board will give you a boost. And if you're running desktop publishing or image editing programs at very high resolutions, this is the board for you. To top it all off, the 3D Pro Turbo can hook up to your TV.

The 3D Pro Turbo gets our highest multimedia score thanks to blazingly fast performance in our PowerPoint tests—especially at resolutions above 800 by 600. It didn't have the highest quality or fastest overall 3D performance that we've seen, but it definitely held its own in our 3D tests. The board's performance in business programs (represented by our PC WorldBench test) was strong, but no better than less expensive boards on the chart. And if you play video clips a lot, be warned: ATI's 3D Pro Turbo slogged through our AVI video clip at a choppy 10.5 frames per second.



TV TIME: The ATI 3D Pro Turbo PC2TV, ATI 3D Xpression+, and Diamond Stealth 3D 2000 Pro can all hook up to your TV.

Besides high-quality utilities to change graphics settings, the 3D Pro Turbo comes with some nice software: Macromedia's Extreme 3D, for professional-level 3D modeling and animation; MGI's 3Dvision, for adding 3D objects to business documents and presentations; and MGI's PhotoSuite, for photo editing. Overall, ATI's 3D Pro Turbo PC2TV is a powerful bundle that's a steal at $219. *ATI, 905/882-2600, www.atitech.com.*

READER SERVICE NO. 601

2 DIAMOND STEALTH 3D 3000

PRO: Fast 2D performance, good price.

CON: A driver bug caused a problem in one 3D game; no toll-free phone support, slow in 3D frame-rate tests.

VALUE: Great all-around board.

Our second-place graphics card gets strong marks across the board—the Diamond Stealth 3D 3000 cranked through our PC WorldBench test suite, easily handled our Macromedia Director test, and even played two of our three 3D games with stunning quality. Because the board uses VRAM, it can maintain steady refresh rates at high resolutions—and $170 is a bargain for a board with this type of RAM.

The Stealth 3D 3000 got outstanding ratings in subjective tests with the 3D games Monster Truck Madness and Terracide. It also ran our AVI video test flawlessly at 30 fps. The main reason its 3D score is only adequate: The board turned in one of the lowest frame rates in our VRML and 3D game tests. In addition, because of a driver bug, the Independence Day game looked more like a black-and-white architectural design than a game we'd like to play. Diamond says it is fixing the problem.

The Stealth 3D 3000 comes with intuitive graphics utilities, but it's currently missing some useful tools, specifically virtual desktop, which helps you move around the screen when an image is larger than the screen itself, and zoom, which allows you to move in on particular sections of an on-screen image. Diamond says these capabilities will be added to the board's InControl tools by the time you read this. Overall, the Stealth 3D 3000 is a great package, with an easy setup program and weekend tech support. If you plan to edit images or publish documents in addition to tasks like word processing, this is the board for you. *Diamond Multimedia, 800/468-5846, www.diamondmm.com.*

READER SERVICE NO. 602

3 ATI 3D XPRESSION+ PC2TV

PRO: Good 2D, nice bargain.

CON: No toll-free support, mediocre AVI video playback.

VALUE: At this low price, you can't find a more complete package.

At just $129, the ATI 3D Xpression+ PC2TV is the least-expensive board on the chart. A slower sibling of the number one 3D Pro Turbo PC2TV, this board is good for users on a budget who work mainly with business apps but also want to dabble in 3D and display PC images on a TV.

It's not the fastest performer, but the 3D Xpression+ PC2TV consistently scored well in our PC WorldBench tests, especially at a resolution of 1024 by 768. Its 3D quality is solid if not spectacular: Images looked okay and frame rates were average. And like its first-place sibling,the 3D Xpression+ PC2TV connects to a TV if you want to browse the Web, play games, or do presentations on a television screen.

Our lone disappointment came in AVI video playback. ATI has done a good job over the years of creating the best video images, with crisp, smooth edges. But recently we've found frame rates for all the ATI boards we've tested to be below average. At just 10.7 fps, full-screen video clips look jerky when played with the 3D Xpression+. *ATI, 905/882-2600, www.atitech.com.*

READER SERVICE NO. 603

4 STB NITRO 3D

PRO: Inexpensive, fast 2D, toll-free support, lifetime warranty.

CON: So-so game play, driver bug caused a problem in one 3D game.

VALUE: Great in 2D but merely adequate in 3D.

Get the $149 STB Nitro 3D if you want speedy performance in business programs, but think twice if you're a gamer. The ▶

CIRQUE

Put your finger here.

Now glide it left, then right.

You've just reviewed a night's worth of websites.

(Try doing that with your mouse.)

New Cirque Power Cat™ Touchpad. Feel the power at your fingertip.

- Single, double and right taps
- Drag, draw or highlight beyond the pad's edge
- Tactile feedback
- 2 buttons
- Maintenance-free

All the benefits of an Easy Cat™ plus:

- Easy vertical and horizontal scroll
- One-touch zoom
- Audible feedback
- Programmable buttons and settings

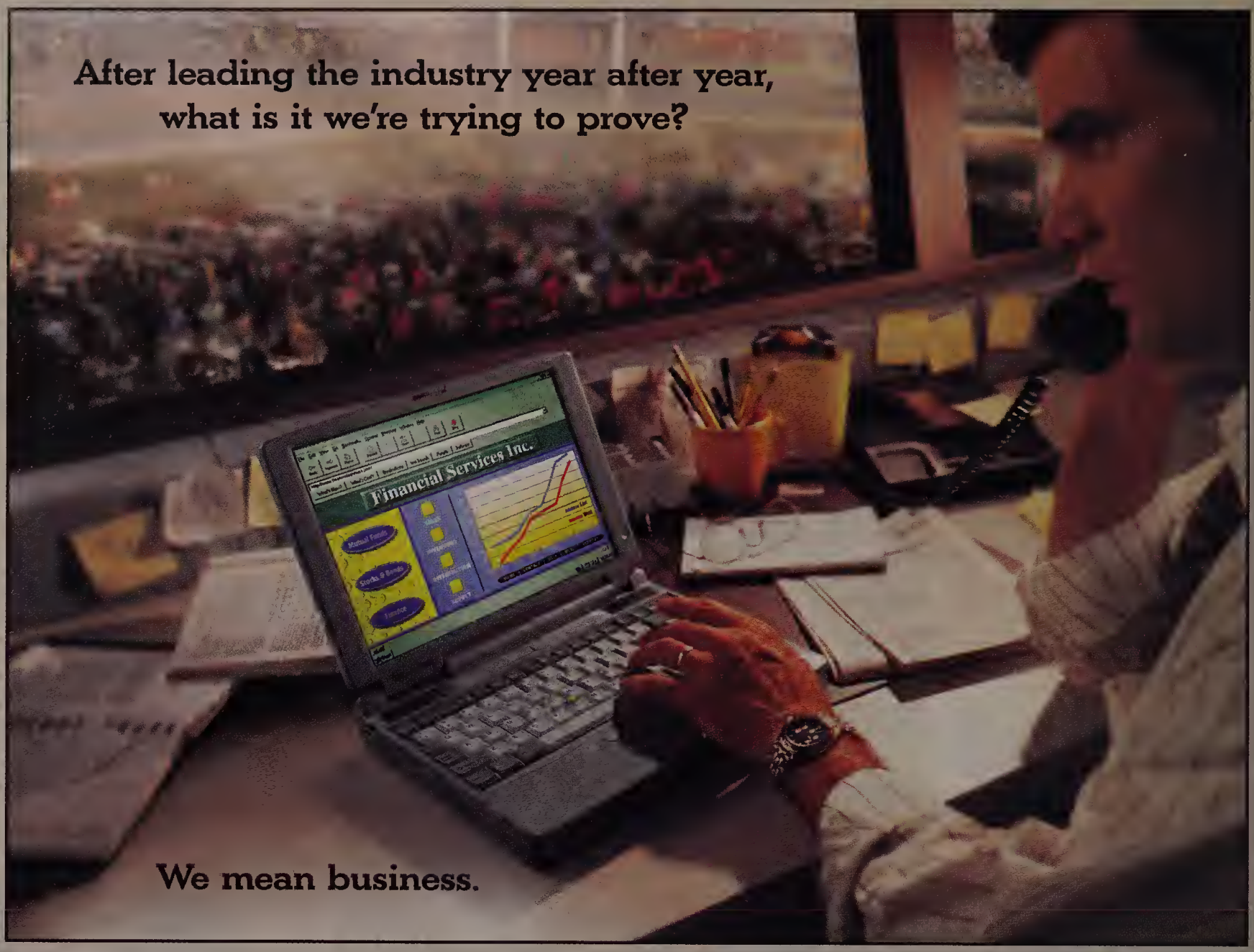
Just touch. And go. Using the new Cirque Power Cat touchpad is that easy. Do everything a mouse can do and more, without moving your hand. Scroll through a document, zoom in and out and surf the Web. The Cirque Power Cat also comes with a stylus (nifty pen-like device) that lets you sign on-screen memos. The Power Cat is faster, easier, smarter and more powerful than any measly mouse could ever be. Its patented GlidePoint Control lets you use your natural pointing motion to put the power of computing at your fingertips.

Cirque Cat. Mightier than the Mouse.™

GLIDEPOINT CONTROL®

©1997 Cirque Corporation.

www.cirque.com



Introducing the new Toshiba Tecra. The ultimate portable for corporate America.

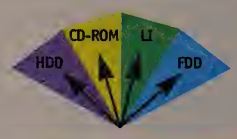
If there's one thing we know how to do well, it's raising portable industry standards to new levels. Something we couldn't do without the constant challenge of not only meeting your needs, but surpassing them. Introducing the Tecra™ 530CDT. A portable packed with the perfect balance of performance, portability and expandability. Delivering a high-resolution TFT display, large storage capacity and a 166MHz Intel Pentium® processor with MMX™ technology. All wrapped up in a sleek new design. The Tecra 530CDT. Experience the portable that will take the business world into the next millennium. When you do, you'll find yourself in a place where staying ahead of the game is a way of life. With one clear intention. Always Lead.™

Tecra 530CDT/520CDT

- 12.1" dia. active-matrix TFT color display
- 1024 x 768 resolution (530CDT)
- 800 x 600 resolution (520CDT)
- 166MHz Pentium® processor with MMX™ technology, 256KB L2 cache
- 2.1 billion byte (=2.02GB) removable HDD
- 32MB high-speed EDO DRAM (expandable to 160MB)
- PCI system-bus architecture
- SelectBay™ supports CD-ROM, floppy disk drive, optional second hard drive or optional second Lithium Ion battery
- Modular 10X* CD-ROM
- HiQVideo™ PCI graphics controller with 2MB video memory (4Mbit EDO RAM)
- Universal Serial Bus (USB) port
- MPEG playback through either software or optional ZV Card
- 16-bit MIDI, WAV and Sound Blaster® Pro compatible with stereo speakers and microphone
- Supports two Type II or one Type III 16-bit PC Cards, ZV Cards or 32-bit CardBus Cards
- Built-in cellular-ready 33.6Kbps, V.34 voice/data/fax modem
- Fast Infrared (FIR) IrDA compliant port
- Lithium Ion battery
- Optional Desk Station V Plus docking station or NoteDock™ II Enhanced Port Replicator
- Windows® 95
- 3-year limited warranty
- Toll-free technical support - 7 days a week, 24 hours a day

For more information, visit http://computers.toshiba.com, or call 1-800-457-7777.

In Touch with Tomorrow
TOSHIBA



CUSTOMIZED CONFIGURATION
With the SelectBay,™ configure your system to meet your needs. Swap out your 10X* CD-ROM with a floppy disk drive, optional second 2GB hard drive or optional second Lithium Ion battery.

ULTIMATE PERFORMANCE
Experience accelerated multimedia applications with MMX™ technology, 32-bit PCI architecture and 32MB of memory, standard.

EXPANDABILITY
With our one-touch hot docking solution, you get additional slots for PC Cards, PCI and ISA Cards and stereo speakers.

©1997 Toshiba America Information Systems, Inc. All specifications and availability are subject to change. *10X average speed. All products indicated by trademark symbols are trademarked and/or registered by their respective companies. Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation.

Circle 228 on reader service card

Pump up your Pilot with the power of synchronization.

You bought your PalmPilot to keep all your personal information close at hand. Now you need to stay "in sync" with your PC. Whether you want to be a better Lotus "Organizer", get your Symantec "ACT!" together, get a fresh Microsoft "Outlook", have your "GoldMine" of information at your fingertips, and a whole lot more, IntelliSync™ software by Puma Technology gives you the choice. And with its patented DSX™ (Data Synchronization Extensions) technology, IntelliSync offers unparalleled speed, accuracy and versatility. So pump up your PalmPilot today!

To order, visit your local reseller or the Puma Web Store at www.pumatech.com.
Or, simply call 1-800-774-PUMA.

Puma
IntelliSync™
For PalmPilot

DSX™ Data Synchronization Extensions
© 1997 Puma Technology

IntelliSync syncs with: Schedule+, Outlook, Lotus Organizer, ACT!, ECCO, GoldMine, Sidekick, Now Up-to-Date, and Day-Timer Organizer

Puma Technology, IntelliSync, the Puma IntelliSync logo, DSX, and the DSX logo are marks of Puma Technology, Inc. which may be registered in some jurisdictions. All other marks are owned by their respective owners.

Circle 215 on reader service card

Nitro 3D consistently scored at the head of the pack in our PC WorldBench tests at all resolutions. In addition, this board generated a perfect 30 frames per second in our AVI video playback test. But the STB board just isn't able to handle 3D games: Game play in Monster Truck Madness and Independence Day was only fair, and it received a poor rating in Terracide because of a driver bug that caused explosions to be surrounded by black boxes (a new driver should be available by the time you read this).

STB is one of only two vendors on the chart to offer toll-free phone support (the other is Hercules)—a nice plus. But if you want your graphics board to play 3D games, no amount of toll-free support will help: This board's 3D is just not top quality. *STB, 888/234-8750, www.stb.com.*

READER SERVICE NO. 604

5 DIAMOND STEALTH 3D 2000 PRO

PRO: Fastest 2D, inexpensive, strong multimedia board.

CON: A driver bug caused a problem in one 3D game.

VALUE: Except for bug, an ideal entry-level board.

The $135 Diamond Stealth 3D 2000 Pro is nearly as good as the boards ranking above it on the Top 10. This board is not ▶

The ABCs of Graphics

THE MORE YOU know about graphics board terminology, the better equipped you'll be to pick the board that's right for you. Here's a selection of terms to keep in mind:

GRAPHICS BOARDS

Color depth. Describes how many colors your graphics card can display at one time: 8-bit color depth shows 256 colors; 16-bit color depth shows 65,536 colors; and 24-bit color depth shows over 16 million colors.

Dual-ported memory. Dual-ported memory is RAM with front and back doors. Graphics data can come in the front and then directly out the back for extra speed. VRAM and WRAM are both dual-ported. (EDO VRAM is a faster form of VRAM.)

EDO DRAM. This is today's plain-vanilla memory. When you're working in business programs, EDO DRAM will give you fine performance, as long as your card has a good 2D chip.

EDO VRAM. See *dual-ported memory.*

RAMDAC. The RAM digital-to-analog converter takes the digital information your PC understands and turns it into analog data that your monitor can display. The faster it works, the higher your refresh rates.

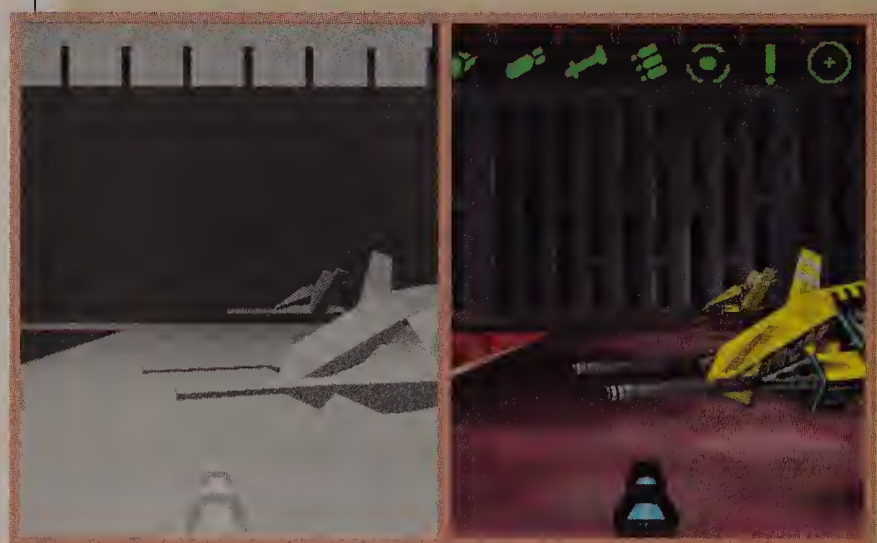
Refresh rate. The number of times per second that the screen is redrawn. Refresh rates below 75 Hz cause noticeable flicker and can strain your eyes.

SGRAM. See *synchronous memory.*

Synchronous memory. This type of memory is synchronized to work at the same speed as the system bus, which theoretically doubles the speed of your graphics. Its two flavors, SDRAM and SGRAM, are essentially the same, except that SGRAM has some features that specifically enhance graphics.

Video interpolation. When you enlarge a video window, the edges of images become jagged unless your graphics card uses interpolation. You want a card that interpolates on both the X and Y axes.

VRAM: See *dual-ported memory.*



ADDING A FEEL OF TEXTURE: Without texture-mapped images (on the right), 3D scenes look more like black and white drawings.

3D SOFTWARE

API (application programming interface). When talking about 3D, the API is the software that lets a 3D program communicate with a 3D graphics board. In order for a 3D board to speed up a 3D game, the game has to be written with an API that the board supports.

Direct3D. Microsoft's Direct3D API is supposed to be the standard that all 3D software and boards will support. Direct3D has had performance problems, however, so game makers often use APIs that are specific to certain 3D boards.

OpenGL. A specialized API, used mostly in high-end CAD software. Software developers are starting to consider using OpenGL, rather than Direct3D, as the API for development.

3D IMAGE TECHNOLOGIES

Alpha blending. A way of mixing two overlapping texture maps so that one looks transparent. Take the example of laser beam fire on a green wall. The image of the laser beam is surrounded by a black box. In order for the laser beam to look realistic, the black needs to be removed and the green in the wall must be blended with the color of the beam.

Filtering. Eliminates blockiness in 3D images.

Fogging. Blends a 3D object with a fixed color as it moves farther away, making it look like it's disappearing into or appearing out of fog or darkness.

MIP mapping. Stores several sizes of a texture map in order to fit the images on objects of varying size. This is helpful when you're moving toward a texture-mapped object: Without MIP mapping, the edges of a texture-mapped object will start to flicker—or sparkle—as the 3D chip tries to stretch or condense the texture map to fit the object. With MIP mapping, there's less stretching because the chip can throw larger or smaller textures onto the object quickly.

Perspective correct. Makes texture-mapped 3D objects look realistic from different angles and distances.

Texture mapping. Puts a bit map onto a 3D surface to make the object look more realistic. For instance, in Microsoft's Monster Truck Madness, the graphics board continuously throws a bit map of sand onto the dunes as you move around the scene, making the sand dunes look more realistic.

A breakthrough so visually advanced it leaves mere specs behind.

The MICROFILTER cathode ray tube is a brilliant breakthrough based on Toshiba's totally new approach to visual technology — relying far more on innovation than improved specifications. The result is a 30% increase in both brightness and contrast over our conventional CRTs. MICROFILTER utilizes original Toshiba technology — forming the micro-particulated material layer with primary color filters. Thus, shadow mask technology advances to a whole new level, surpassing even the aperture grill technique. Moving images are clear and bright; text is sharp and readable. In other words, MICROFILTER technology realizes the full visual potential of multimedia. Break through to a new level of brightness and contrast. The Toshiba MICROFILTER CRT.

microfilter CRT

More That Meets the Eye

http://www.toshiba.com/taec

In Touch with Tomorrow

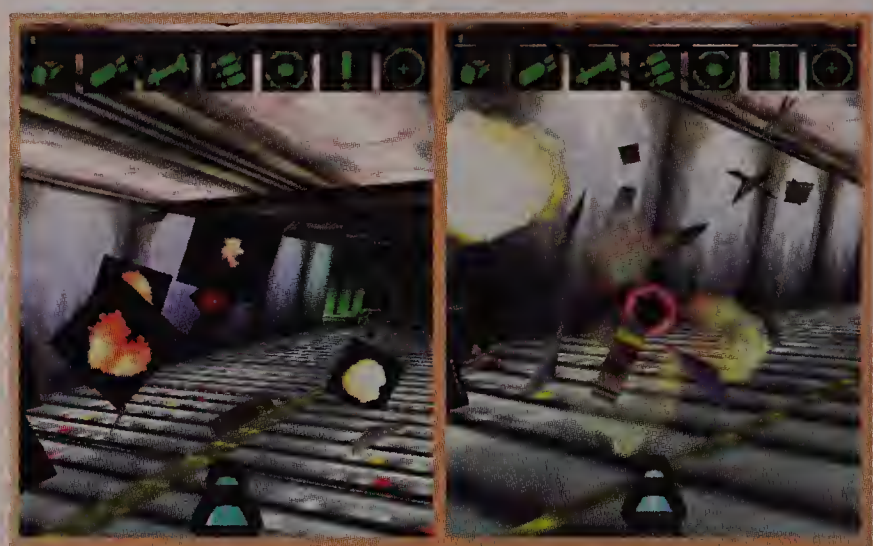
TOSHIBA

Toshiba America Electronic Components, Inc., Electron Tube and Device Division
One Pkwy., North, Suite 500, Deerfield, IL 60015, U.S.A. Tel: (847) 945-1500 Fax: (847) 945-1044

Circle 234 on reader service card

as powerful as the number two Best Buy, the Stealth 3D 3000. That's because the Stealth 3D 2000 Pro uses slower, single-ported EDO DRAM, which can't manipulate graphics as quickly as the VRAM in the Stealth 3D 3000. Still, in everyday business programs like those used in PC WorldBench, the Stealth 3D 2000 Pro is a powerhouse. The Stealth 3D 2000 Pro was the best performer across all three resolutions at which we tested the boards. And as with both the ATI boards on the chart, you can connect the Stealth 3D 2000 Pro to a television.

The Stealth 3D 2000 Pro does very well in multimedia: It ran our AVI video test at a perfect 30 fps. Results of the Director animation test were top of the line, and performance in the PowerPoint test was respectable. We liked how Monster Truck Madness and Terracide looked with the Stealth 3D 2000 Pro, but as with the Stealth 3D 3000, Independence Day suffered from a driver bug.



SHOOTING BLANKS: Without proper alpha blending, the laser fire and explosions on the left aren't rendered correctly.

Like the Stealth 3D 3000, this board lacks virtual desktop and zoom utilities. But Diamond promises that these tools will be incorporated into its InControl tools by the time you read this. *Diamond Multimedia, 800/468-5846, www.diamondmm.com.*

READER SERVICE NO. 605

6 HERCULES TERMINATOR 3D/DX

PRO: Speedy in multimedia apps, affordable, toll-free support.

CON: Mediocre 3D quality, only fair documentation, a driver bug caused a problem in one 3D game.

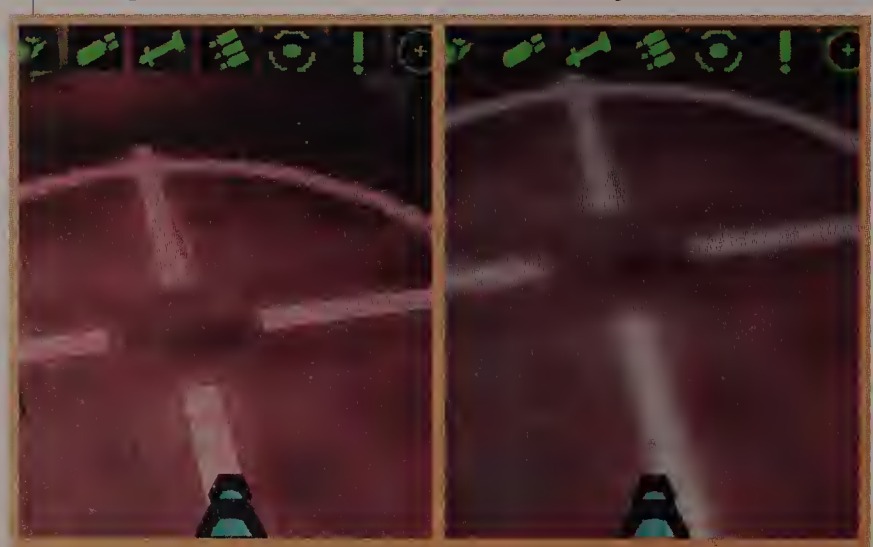
VALUE: A good buy—unless you play lots of 3D games.

Hercules' $149 Terminator 3D/DX is much like the Diamond board that ranks right above it on the chart—it uses the same type of video chip and amount of memory and costs less than $150. It handled all our multimedia tests well, but it was a smidgen slower than the Diamond Stealth 3D 2000 Pro on PC WorldBench tests, and it didn't run 3D games quite as well.

We liked the Hercules board's performance in Monster Truck Madness, but the same driver problem that plagued the STB Nitro 3D in Terracide made that game virtually unplayable with the Terminator 3D/DX, too. In addition, we thought the image quality in Independence Day was lousy. The board's performance in our VRML test was average.

Hercules is one of only two vendors in our Top 10 that offers toll-free technical support, a big plus—especially since the documentation is dense and difficult to follow. *Hercules, 800/532-0600, www.hercules.com.*

READER SERVICE NO. 606



SMOOTH OPERATOR: Without filtering (on the left), this landing pad looks blocky. Filtering makes images look smoother.

7 STB VELOCITY 3D

PRO: Lifetime warranty, toll-free support, expandable to 8MB.

CON: So-so AVI, a driver bug caused a problem in one 3D game.

VALUE: Good for 2D and animation, but skip it if you're looking for top-notch video or 3D playback.

The STB Velocity 3D is based on the same S3 Virge/VX chip as our second-place Best Buy, the Diamond Stealth 3D 3000. But unlike the Stealth 3D 3000 the $199 Velocity 3D just doesn't live up to its potential. It lagged in our PowerPoint and VRML tests and logged just 11.9 fps in AVI playback. It also had the same problem running 3D games that several other Virge-based boards have had: Due to a driver bug, special effects that use alpha blending, such as explosions, were rendered incorrectly.

But the Velocity 3D does have some strong points. To its credit, it was among the fastest boards at running the animated Macromedia Director test. In addition, STB backs its board with a lifetime warranty and toll-free phone support. Finally, if you want extra graphics board memory in order to handle photorealistic colors at ultrahigh resolutions, the Velocity 3D allows you to add an extra 4MB of RAM.

Take a look at the Velocity 3D if you do image editing and need steady refresh rates at high resolutions and color depths, or if you just want solid 2D performance for your business applications. But if you want to dabble in 3D or video, go with a stronger board. *STB, 888/234-8750, www.stb.com.*

READER SERVICE NO. 607

8 MATROX MYSTIQUE 220

PRO: Fast in 2D and in 3D, good multimedia, expandable to 8MB.

CON: Low quality 3D images, no toll-free or weekend support.

VALUE: Fine for everything but games.

When we describe the $179 Matrox Mystique 220, we're talking about a board we both love and hate. The Mystique is a fast 2D board that's good in multimedia applications and can redraw a 3D scene as quickly as any card we've looked at. On the other hand, if you want good-looking 3D images, look elsewhere: The Mystique's are some of the ugliest we've seen. ▶

BONNIE BLAIR: SPEED SKATER, SPEED SURFER

For mind-blowing speed on the Internet, Bonnie goes with the gold medal performance of MindSpring. Its fast, reliable access takes her direct to the Internet. No delays. No detours. No false starts.

So, exercise your options and get a speedy, easy-to-use MindSpring Internet connection. You'll get a software suite with a top-rated browser, great e-mail, newsgroups and more. MindSpring–the fast, reliable Internet service provider that's heads-above the crowd.

With MindSpring you get:

- Flexible pricing – from as low as $6.95 to $19.95 a month for unlimited access
- Free software for Mac or Windows – Call **1-888-M-SPRING**
- Free Web space with most plans – 5 to 10 MB
- Free 24-hour technical support
- And, a no risk, 30-day money back guarantee

Bonnie Blair, Gold Medal Speed Skater

MindSpring™

Direct To The Internet.

www.mindspring.com

Now it's easy to create your personal Web page with HotDog Express™, the top-rated Web page software.

Call today to receive your FREE HotDog Express™ Software* a $49.95 value.

1-888-M-SPRING

(1-888-677-7464)

No risk, 30-day money back guarantee. Hurry, offer expires October 31, 1997.

*Available only with select usage plans

PC WORLD BEST BUY · PC MAGAZINE · NETGUIDE AWARDS Winner · U.S. Robotics X2 56Kbps modem

© 1997 MindSpring Enterprises, Inc. All other names are trademarks or registered trademarks of their respective holders.

Circle 57 on reader service card

DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ◆ Microsoft Windows 95 ◆ Microsoft Mouse (MS IntelliMouse on XPS Systems) ◆ 2 Universal Serial Bus (USB) Ports ◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service ◆
Upgrades: ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $99. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ APC Back-UPS Pro 650, add $299. ◆ 3 yrs. On-site Service, add $99

NEW DELL DIMENSION® XPS D300
300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 128MB SDRAM, add $499.*

$3499

Business Lease◊: $123/Mo.
Order Code #500909

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*

$2899

Business Lease: $105/Mo.
Order Code #500908

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- AWE64 Value Sound Card
- Altec Lansing ACS-90 Speakers

★ *Upgrade to an 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $99.*

$2499

Business Lease: $90/Mo.
Order Code #500907

DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 4MB WRAM Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to a 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2199

Business Lease: $79/Mo.
Order Code #500906

SYSTEMS THAT BLOW YOUR MIND.

DELL DIMENSION DESKTOPS FOR HOME

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ *NEW* 56K Capable** U.S. Robotics x2 WinModem ◆ MS Home Essentials plus Best of Entertainment Pack ◆ Microsoft Windows 95 ◆ MS IntelliMouse ◆ 3 Year Limited Warranty with 1 Year On-site Service
Upgrades: ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3-Pak of Zip 100MB Cartridges, add $39. ◆ HP DeskJet 820Cse Color Printer, add $299.

NEW DELL DIMENSION XPS D300
300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- AWE64 Value Sound Card
- Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$3799

***NEW* Personal Lease: $169/Mo.°Ø**
Order Code #500904

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-290 Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$2999

***NEW* Personal Lease: $134/Mo.°Σ**
Order Code #500903

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Ultra ATA Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to Altec Lansing ACS-290 Speakers with Subwoofer, add $75.*
★ *Upgrade to 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2399

***NEW* Personal Lease: $107/Mo.°∞**
Order Code #500902

DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Nitro 4MB EDO PCI Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to a 64MB SDRAM, add $199.*
★ *Upgrade to 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $79.*

$1999

***NEW* Personal Lease: $89/Mo.°π**
Order Code #500901

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

†Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P. Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ∞ 20X Max./11X Min. Ω12X Max./8X Min. §24 Max./12X Min. **x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ††Advertised configuration varies from tested configuration. ^4MB Baseboard with a 4MB Upgrade Module. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

°Amount of monthly lease payment, based on 24-month lease from Dell Financial Services L.P., an independent entity; amount due prior to delivery: Ø$338; Σ$268; ∞$214; π$178 (amounts exclude taxes which may vary; for example, Hartford City, IN fees Ø$8.45); no security deposit required, subject to credit approval and availability. Lease terms subject to change.

DELL DIMENSION M200a
200MHz PENTIUM PROCESSOR
WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 3Com 3C509B EtherLink III 10Mbit ISA Combo Card
- Iomega Zip 100MB Internal Drive with One Cartridge

★ *Upgrade to 32MB SDRAM, add $99.*
★ *Sound Blaster 16 PnP and Altec Lansing ACS-90 Speakers, add $89.*

$1799

Business Lease: $65/Mo.
Order Code #500905

SOFTWARE DESCRIPTIONS

MS Office 97 Small Business Edition (SBE) includes:
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

MS Home Essentials plus Best of Entertainment Pack (available on desktops only) includes:
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0
- TETRIS, Taipei, SkiFree, Dr. BlackJack and more.

DELL POWEREDGE® SERVERS

Common features: ◆ 512KB Integrated L2 ECC Cache ◆ Integrated PCI Ultra-Wide SCSI-3 Controller ◆ Intel® Pro/100B PCI Ethernet Adapter ◆ Intel LANDesk® Server Manager v2.5x ◆ **3 Years Next Business Day On-site Service**

DELL® POWEREDGE® 2200 SERVER
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 64MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- MS Windows NT® Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

$4749

Business Lease: $166/Mo.
Order Code #250081

DELL POWEREDGE 2200 SERVER
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- MS Windows NT Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

★ *APC Smart-UPS 700w Power Supply, add $399.*

$3749

Business Lease: $134/Mo.
Order Code #250085

NOT YOUR WALLET.

DELL LATITUDE® NOTEBOOKS

Common features: ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts CD-ROM (20X Max°° Variable on LM M166ST or 12X Max^Ω Variable on LM M133ST), 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

DELL LATITUDE® LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 72MB EDO RAM
- *NEW* 4GB Hard Drive
- MS Office 97 Small Business Edition

★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*
★ *3Com Lan+ 33.6 Modem PC Card, add $299.*
★ *Dell Latitude LM Port Replicator, add $159.*

$3999‡

Business Lease: $141/Mo.
Order Code #800168

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB EDO RAM (72MB Max)
- 2.1GB Hard Drive
- Motorola 33.6 Fax Modem
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB EDO RAM, add $299.*
★ *Upgrade to a NEW 4GB Hard Drive, add $349.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*

$3499‡

Business Lease: $123/Mo.
Order Code #800169

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB EDO RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *NEW 56K Capable** x2 Modem, add $149.*
★ *Dell Latitude LM Port Replicator, add $159.*

$2899‡

Business Lease: $105/Mo.
Order Code #800140

***NEW* DELL LATITUDE LM M133ST**
133MHz PENTIUM PROCESSOR W/MMX

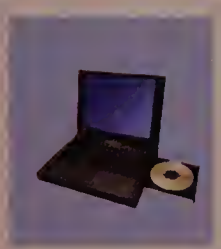
Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 24MB EDO RAM, add $99.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Nylon Carrying Case, add $69.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *3Com 10Base-T Network Card, add $129.*

$2599‡

Business Lease: $94/Mo.
Order Code #800154

Call for details on Dell's Business Leasing and new Personal Leasing programs.

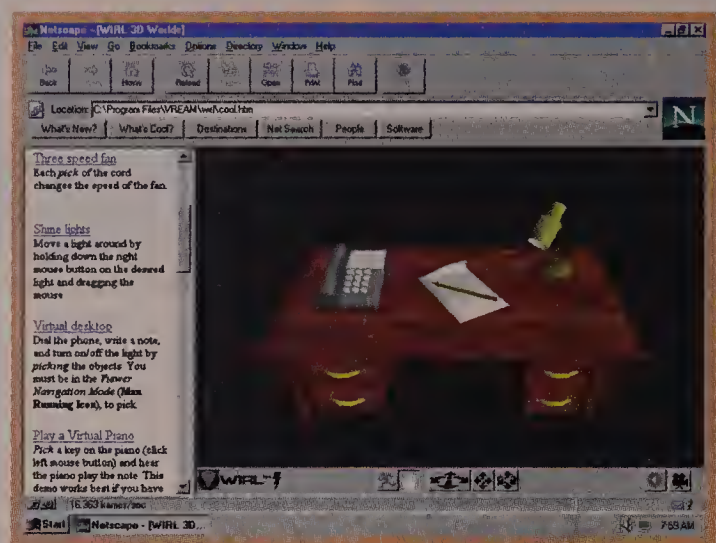


TO ORDER TOLL-FREE
800-545-9692
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03302

DELL®

Matrox doesn't include filtering with any of its boards—and it's filtering that keeps 3D graphics from looking blocky and "pixelated." There is an advantage in this for Matrox. Without filtering, frame rates are faster, so game play is smoother. And that's why the Mystique earns only an adequate 3D score: It delivered high frame rate counts in both our VRML and 3D game tests—but who wants fast games when you can't stand to look at them? At least the Mystique was fast in our PowerPoint test at 1024 by 768, and it cranked out 28.3 fps in our AVI video test.



VIEWING VRML: To test images in a virtual world, we moved this desk through 3D space and measured frame rates.

If you must play 3D games with the Mystique, be sure to check Matrox's Web site (www.matrox.com) to see what games work best with the board. In our experience, Direct3D games just don't look good with this graphics board. *Matrox, 800/361-1408, www.matrox.com/mga.*

READER SERVICE NO. 608

9 HERCULES STINGRAY 128/3D

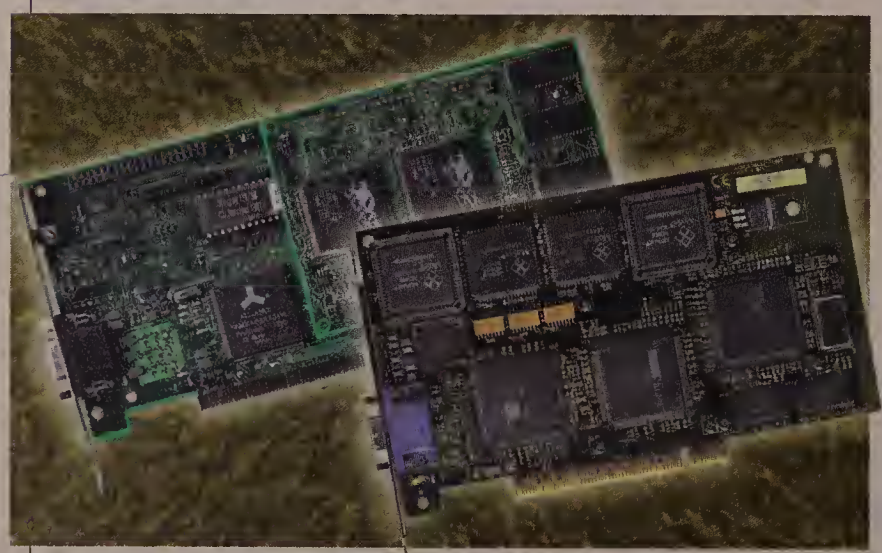
PRO: Best 3D quality, toll-free support.

CON: Expensive, relatively slow 2D, worst AVI video playback.

VALUE: Get it if you're a serious gamer with extra dough to spend.

The $249 Hercules Stingray 128/3D delivers some of the best 3D quality we've seen, but it lags behind the competition in 2D graphics and struggles with video.

The reason the Stingray 128/3D is so great in 3D (both VRML and games) is that it uses a separate 3D chip set from 3Dfx that is widely recognized for producing the best 3D quality on the PC. And the chip set works: Games looked great, and movement in our VRML world was smooth. But the 3Dfx Voodoo Rush chip set is incompatible with the Virge and Tseng graphics chips that lead the way in 2D performance. Instead, the Hercules board uses an Alliance chip that doesn't keep up with the leading edge for 2D. Its PC WorldBench test scores were below those of all the other graphics boards that made the Top 10 chart, and its multimedia performance was worse.



CHIP OFF THE OLD BLOCK: The Hercules Stingray 128/3D and the VideoLogic Apocalypse 5D (not reviewed) have separate 3D chips.

People who use basic business applications such as word processors and spreadsheets probably won't notice the performance hit. But the more graphically intense your programs, the more you'll wish your board had better multimedia performance. Of course, if you dream in 3D, you can't do better than the Hercules Stingray 128/3D. *Hercules, 800/532-0600, www.hercules.com.*

READER SERVICE NO. 609

10 NUMBER NINEFX REALITY 772

PRO: Fast in 2D and multimedia.

CON: Poor in 3D, no toll-free or weekend support, expensive.

VALUE: Graphics professionals would like it, but wait for a price drop.

The fast Number NineFX Reality 772 excels in multimedia, but it's expensive at $279. That's more than the Stingray 128/3D, which has an altogether separate 3D chip set. Expect to see the NineFX Reality 772's price come down rapidly, especially as Number Nine rolls out its new Revolution 3D card (see "Coming Right Up: Tomorrow's 3D"). If you can get the NineFX Reality 772 for less than $200, it's worth a look. The Number Nine board easily handled the 2D applications in our PC WorldBench test suite, performed admirably in PowerPoint and Macromedia Director, and sped along at 30 fps in our AVI playback test. But this is not a board you would want if you're into 3D games.

When the NineFX defaults to a color depth setting for a game, you shouldn't have any problem. But if you choose a color depth of 16 bits, which normally works just fine—colors are distorted. Actually, no board that uses S3's Virge chip can play Direct3D games correctly at 16 bits; the closest they can manage is 15 bits. Although you're cheated out of some colors, you won't really notice. Most companies using the S3 chip offer a 16-bit color setting, even though the games will run at 15 bits. Number Nine's only crime is its relative honesty: It gives you both settings, even though 16 bits doesn't work right.

The NineFX Reality 772 works well in desktop publishing or image editing applications because of its dual-ported memory. But there are better bargains for graphics and publishing professionals. *Number Nine, 800/438-6463, www.nine.com.*

READER SERVICE NO. 610

Beyond the Top 10

online

We evaluated these graphics boards along with those reviewed in this article, but they did not make the Top 10. For more details, see PC World Online (www.pcworld.com/oct97/graphics).

- Creative Labs 3D Blaster PCI
- Creative Labs Graphics Blaster 3D
- Matrox Millennium II
- Number Nine Imagine 128 Series 2e
- VideoLogic Apocalypse 5D
- VideoLogic GrafixStar 750

Brad Grimes is a senior associate editor for PC World. *Testing by Ulrike Diehlmann and Mike Salayko of the PC World Test Center.*

For more information about all products in this article, circle reader service no. 910. ■

Still trying to decide

when to buy

a 56K modem?

Let us make it easy for you.

Now get

$50

cash back.

$50 (US) rebate offer replaces previous free month of ISP service (up to $25 US) for U.S. Robotics desktop modems only. Original free month of ISP service offer still applies to Megahertz® 56K PC Card modems, models XJ1560, CC1560, XJ5560 and CC5560.

1 All x2 products are capable of 56 Kbps downloads; however, due to FCC rules which restrict power output of service providers' modems, current download speeds are limited to 53 Kbps. Actual speeds may vary depending on line conditions. Uploads from users to providers travel at speeds up to 28.8 Kbps.
2 An x2-capable modem, an x2-compatible analog phone line and an x2-capable service provider are required for these high speed downloads. See www.usr.com/x2 for details.
3 Guaranteed upgrade valid for all currently available Sportster® 56K faxmodems (Models 1783, 1784, 1785, 1786, 1787 and 1789), Courier™ 56K faxmodems (Models 1867, 1868 and 1869) and Megahertz PC Card modems (Models XJ1560, CC1560, XJ5560, and CC5560). This offer valid in the U.S. and Canada only. Upgrades must be claimed by 6/30/98.

©1997 3Com Corporation. All rights reserved. 3Com, the 3Com logo, U.S. Robotics, the USRobotics logo, Megahertz and Sportster are registered trademarks and Courier, x2 and the x2 logo are trademarks of 3Com Corporation or its subsidiaries. All other company and product names are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies. Product specifications subject to change without notice. 8.1.97 #3021

x2™ Delivers...even more.

x2 Delivers...cash back and more

Every day, more and more information is added to the Internet. Like bigger data files, and richer graphics. You're going to need a faster modem than the 28.8K and 33.6K models out there now.

That's why we're making it easier for you to get the x2 technology 56K[1] modem, the fastest ever created for use with regular phone lines – by giving you $50 (US) cash back.

x2 Delivers...high download speeds now

You don't need to wait to take advantage of this modem's superior download speeds. That's because x2 technology has already received the support of more than 800 Internet service providers (ISPs), from industry giants like IBM Global Services, America Online, Prodigy and NETCOM to smaller regional providers. In fact, more than 700 of them are live today, offering local access. That means you can start downloading at high speeds in all 50 states right now with x2.[2] It's that simple.

x2 Delivers...free upgrade to standard

You may have heard that the international 56K modem standard hasn't yet been defined (expected in 1998). That's why we're offering a no-risk guarantee of a free upgrade to make your x2 modem meet this new standard after it's approved. And since x2 uses DSP Solutions technology from Texas Instruments, it can easily be software upgraded to receive future performance enhancements as they're developed.

DSP Solutions
Texas Instruments
©1997 TI

x2 Delivers...guaranteed

To make it easier for you to experience x2 technology now, we're introducing "x2 Delivers More," a special program that will show you why buying an x2 modem now makes so much sense.

x2™ Delivers...more!

$50 (US) CASH BACK

Now, instead of a free month of Internet service, we're offering a $50 (US) mail-in rebate when you purchase a U.S. Robotics x2 technology 56K desktop modem by 10/4/97. It's a great way to help you get even more out of the Internet.

CONNECT NOW in all 50 states and Canada

Right now, more than 700 ISPs are live with x2, so you can connect regardless of where you live.[2]

FREE UPGRADE to standard[3]

After the new 56K ITU-T standard is approved, we'll upgrade your U.S. Robotics x2 technology 56K modem to meet it – absolutely free.

30-DAY money-back guarantee

We're confident you'll be completely satisfied with your new x2 modem. If not, you can return it with your dated receipt within 30 days of purchase – no questions asked.

See the back cover for complete details of the x2 Delivers More program.

x2 Delivers...an easy choice

The ability to connect now in all 50 states and Canada. $50 (US) cash back. A free upgrade to standard. A 30-day money-back guarantee. It simply couldn't be any easier. For more information, visit our Web site at **http://x2.usr.com/connectnow**, or call **1-800-525-USR1** to find an ISP near you that offers live x2 service.

Now download at high speeds with the company that connects more people to the Internet than any other. To get the speed you need, just remember one thing: x2 delivers even more than before.

U.S. Robotics®

x2™ TECHNOLOGY

U.S. Robotics. From the leader in networking. 3Com

$50 (US) CASH BACK WHEN YOU BUY x2 TECHNOLOGY NOW
CONNECT NOW WITH MORE THAN 700 LIVE ISPs NATIONWIDE
FREE UPGRADE TO 56K ITU-T STANDARD
30-DAY MONEY-BACK GUARANTEE

Buy any Sportster® or Courier™ 56K modem with x2™ technology between July 1 and October 4, 1997 and get $50 (US) cash back plus upgrade to 56K ITU-T standard[1] FREE. And if you're not satisfied after 30 days you can return the modem for a full refund.

To get your $50 (US) cash back, just complete and return the form below.

Then, you'll also be registered for the free upgrade. After the ITU-T standard for 56K modems is approved, we'll upgrade your U.S. Robotics x2 technology 56K modem, free of charge. Since every x2 modem is equipped with Flash ROM, we expect the upgrade to be as simple as a software download from the Internet. If it's not, we'll replace your modem with one that does meet the new standard – free of charge. Register your modem, and after the 56K standard is approved by the ITU-T, we will notify you how and when to get your free upgrade. Approval is expected some time in early 1998.

And again, if you're not satisfied with your U.S. Robotics x2 technology 56K modem, simply return it within 30 days of purchase, along with dated receipt, to the store or mail order reseller where you bought it for a full refund.

This offer supersedes all other preceding x2 offers for Sportster and Courier desktop modems. Free month of Internet service offer still applies to Megahertz® 56K PC Card modems.

1 Guaranteed upgrade valid for all currently available Sportster 56K faxmodems (Models 1783, 1784, 1785, 1786, 1787 and 1789), Courier 56K faxmodems (Models 1867, 1868 and 1869) and Megahertz PC Card modems (Models XJ1560, CC1560, XJ5560 and CC5560). This offer valid in the U.S. and Canada only. Upgrades must be claimed by 6/30/98.

TO HELP ENHANCE YOUR INTERNET EXPERIENCE

Get $50 (US) cash back from U.S. Robotics

To get your $50 (US) cash back:

1. Buy any Sportster or Courier modem listed below between July 1 and October 4, 1997.
2. Fill in all requested information on this form.
3. Enclose this completed form with a copy of your dated modem receipt, original UPC bar code symbol and serial number from the modem package (see samples below) and mail to:
   U.S. Robotics, x2 Delivers More, PO Box 8131, Young America, MN 55551-8131

Any questions regarding this program, please call 1-888-390-6863.
This offer supersedes all other preceding x2 offers for Sportster and Courier desktop modems.
Internet service offer (up to $25 US) still applies to Megahertz 56K PC Card modems.

(Please print all information clearly.)

Name _____

Address _____

City _____ **State/Prov** _____ **ZIP/Post** _____

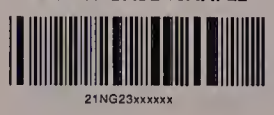
Phone _____ **E-mail Address** _____

Retailer / Mail Order Reseller where modem purchased _____

$50 (US) cash rebate offer valid with purchase of Sportster 56K Faxmodem models 1783, 1784, 1785, 1786, 1787 and 1789; and Courier 56K Faxmodem models 1867, 1868 and 1869 only; purchased between July 1 and October 4, 1997. Offer not valid with Megahertz PC Card modems. Request must include copy of dated modem sales receipt, actual UPC bar code and serial number from the modem package. Not responsible for lost, late or misdirected mail. Request must be postmarked by November 15, 1997. Valid in U.S. and Canada only. **Not valid with any other offer.** Please allow 6 to 8 weeks for receipt of check.

UPC SAMPLE

SERIAL NUMBER SAMPLE



The following UPC codes are the only acceptable codes for this offer. No other UPC codes are valid. Tape UPC bar code over this box.

7-38168-00611-3	7-38168-00612-0	7-38168-00613-7	7-38168-00614-4
7-38168-00615-1	7-38168-00616-8	7-38168-00630-4	7-38168-00629-8
7-38168-00682-3	7-36168-00686-1	7-36168-00669-4	7-36168-00670-0
7-36168-00687-8			

Tape serial number & bar code over this box.

The Web at Your Service

Think the Web is all marketing hoopla? Here's how amateur Websmiths created four public-service sites—plus practical tips for creating your own.

ONCOLINK'S Joel Goldwein, Ivor Benjamin, and Maggie Hampshire.

THIS WEB SITE doesn't wallow in flashy graphics, cute animations, or blinking ads. This site is as serious as cancer, because that's what it's about.

BY JUDY HEIM

Started on a shoestring, the University of Pennsylvania's OncoLink site delivers critical facts to cancer patients, their families, and health care professionals. "I've been able to help more people around the world than most physicians can help in a lifetime in their offices," muses cofounder Joel Goldwein.

OncoLink is one of a growing number of public-service Web sites. As these works of care and compassion attest, you don't need pricey software or technical derring-do to build a site that makes the world a better place. All you need is a good idea and the willingness to invest your time.

Here are the stories of four sites that evolved from hobbies into resources trusted by thousands. Besides OncoLink, they include sites prized by animal lovers, gardeners, and expectant parents.

Want to follow their lead? Read on for tips on tools that can help. Then start your own site—a meeting spot, an information kiosk, or just a place to relax along the crowded Web way. ▶

Facts, Compassion, and Courage for Cancer Patients

SITE: OncoLink
ADDRESS: www.oncolink.upenn.edu
CREATORS: Joel Goldwein, Ivor Benjamin, and others
TOOLS: Adobe Photoshop, various text editors

When cancer strikes, you want all the facts, and you want them right away. That's the role OncoLink fills.

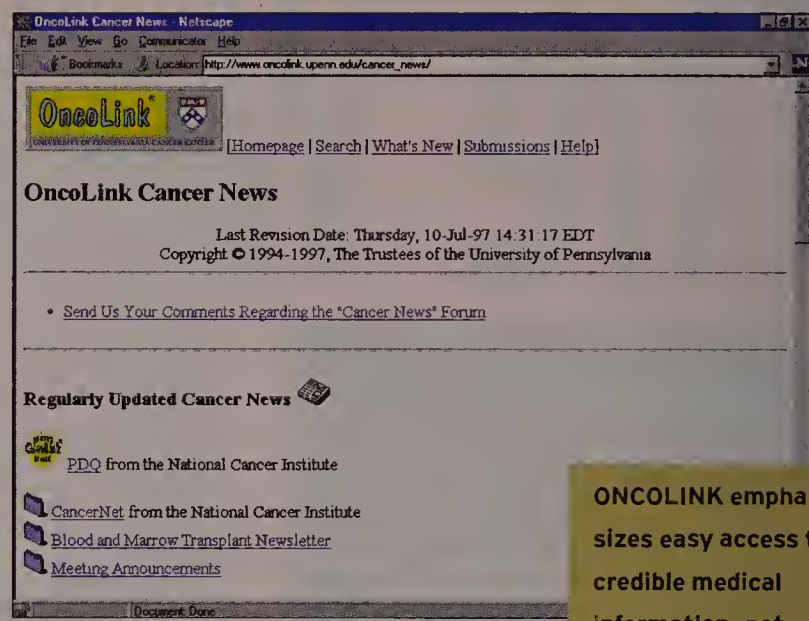
The site began modestly three years ago when Joel Goldwein, associate professor of radiation oncology at the University of Pennsylvania, posted on a Web page a smattering of information for patients, along with some multimedia diagnostic material. "The number of accesses was phenomenal. There were 30,000 to 40,000 accesses in a short time," says Goldwein. "That's more people than you can reach with a medical journal article. I showed the page to my department's chairman. He clearly recognized the utility of this kind of resource and was tremendously supportive."

DOCTORS ON CALL

WITHIN A FEW MONTHS, Goldwein and his colleagues realized that OncoLink would require outside funding and a real staff. Soon after, Goldwein took a six-month sabbatical, during which he threw himself into OncoLink's development with evangelical zeal, working 70 hours a week on the site.

Today OncoLink is funded in part by grants from the National Cancer Institute and a pharmaceutical company. Nurse Maggie Hampshire serves as managing editor, writing features for the site and sifting through the daily deluge of e-mail. She is assisted by one full-time employee and eight part-timers who code pages with text editors, create art for the site, and tend its server. An editorial advisory board of nurses and physicians also pitches in; the members' medical specialties range from gene therapy to head and neck cancer. "We have PCs set up around the office, and some of us work on the site while waiting for patients," explains Goldwein, who devotes about 20 hours a week to answering mail and creating content for the site.

UP Cancer Center personnel carefully screen all OncoLink information for accuracy. Features include links to the Mayo Clinic's site, links to publications like Cancer Weekly Plus, and links to an eclectic mix of articles from news services. Separate sections are devoted to the psychosocial aspects of cancer, cancer causes, and



ONCOLINK emphasizes easy access to credible medical information—not flashy graphics.

Vet Builds Supersite for Animal Enthusiasts

SITE: Electronic Zoo/NetVet
ADDRESS: www.avma.org/ezoo/
CREATOR: Ken Boschert
TOOLS: EditPad, Internet FastFind, LView Pro, Paint Shop Pro, PowerPoint, WebSeeker, WebSite, WordPerfect

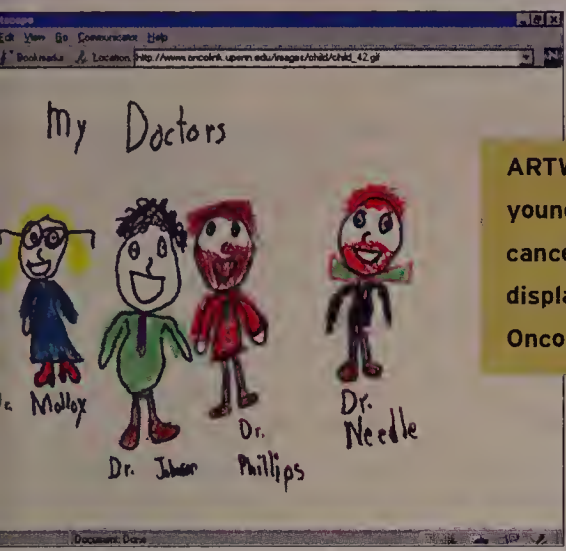
When Scott MacKnight rescued two orphaned baby hummingbirds, he knew where to turn for guidance. The Price, Utah, resident e-mailed Ken Boschert, operator of the Electronic Zoo/NetVet Web site. Boschert, a St. Louis veterinarian, relayed the plea to a vets' mailing list that he runs. Within hours, dozens of vets responded with advice that helped MacKnight care for the fledglings until they were ready to make it on their own. "Without the help I received, the birds would have died within a day or two," MacKnight says.

IT'S HAPPENING AT THE ZOO

ANIMAL LOVERS from around the world flock to Electronic Zoo/NetVet, which

ELECTRONIC ZOO/NETVET's Ken Boschert.

PHOTOGRAPH: JAMES VISSER



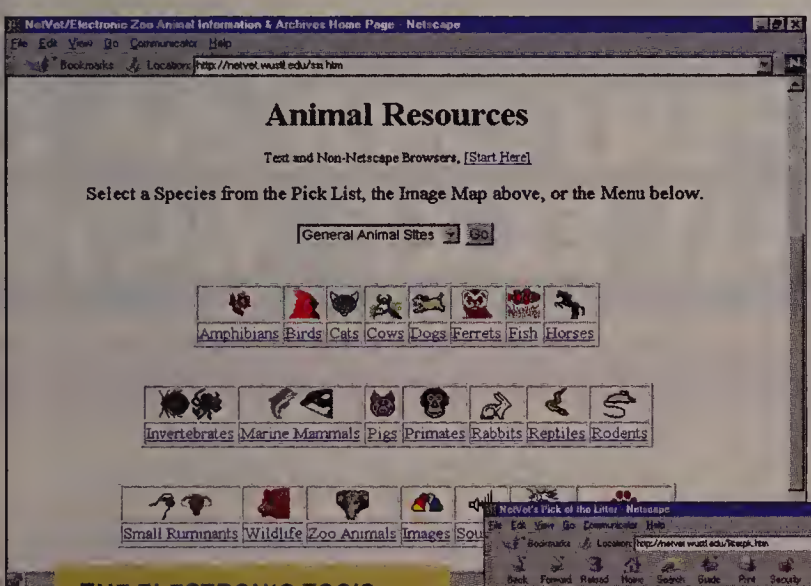
ARTWORK by both young and adult cancer patients is displayed on OncoLink.

related issues such as pain management. The site also includes a column on what it means to have cancer, written by a 14-year-old Philadelphia girl. This feature was inspired by e-mail from children writing school reports on the disease.

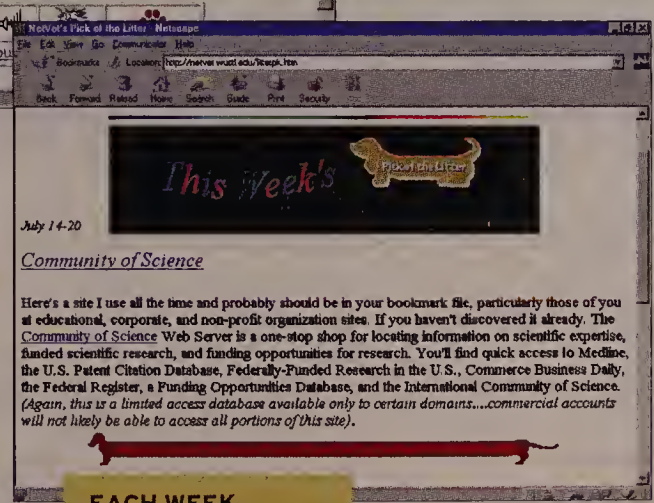
"One of the most popular areas of OncoLink is where we answer questions regarding billing," says Ivor Benjamin, a gynecological oncologist and coeditor in chief of the site, along with Goldwein. Benjamin currently spends 15 to 20 hours a week working on the site. "Patients often get shuttled around by their HMOs...We got one letter from the father of a young woman who had an abnormal pap smear. One doctor told her she needed surgery, but she was told by her HMO's physician that surgery wasn't necessary. The father went to the HMO physician with printouts from OncoLink, and the physician was forced to agree that [the woman] needed surgery."

The site avoids flashy graphics. Says Goldwein, "We think carefully about whether a particular graphic will hamper the process of getting to information." One exception is art by cancer patients, including children being treated at the Children's Hospital of Philadelphia.

Although OncoLink's staff has never promoted the site, except for passing out informational brochures at the University of Pennsylvania medical center and posting brief announcements in Usenet newsgroups, it receives over 2 million hits a month. "It's not unreasonable to say that this site has saved lives," says Benjamin. "If one or two patients go to doctors because of information they've read online, or seek treatment earlier, our purpose has been served. "



THE ELECTRONIC ZOO'S links lead visitors to information on everything from aardvarks to zebras.



EACH WEEK, Boschert selects an outstanding animal-related site as Electronic Zoo/NetVet's "Pick of the Litter."

until recently lived on a Windows NT server in Boschert's cluttered office. "I get some of the most off-the-wall e-mail you can imagine," marvels Boschert. "I got one message from a man in Venezuela whose 5-year-old son was bitten by a peccary. He wanted to know if I knew anything about the microbial oral flora of wild pigs, since the boy's infection wasn't responding to antibiotics. Another man in Colombia wanted me to write a health certificate for a lynx, so local authorities wouldn't throw him in jail for rehabilitating one."

Boschert started Electronic Zoo/NetVet four years ago as a gopher server at Washington University's Medical School. Since then it's sprawled into a Web megasite of over 150 pages, with 15,000-plus links to animal information across the Net. Electronic Zoo contains links to general animal information, including pet advice, while the NetVet half of the site is devoted to veterinary resources.

The site has grown so big that running it single-handedly as a hobby has proved hard for Boschert, the associate director of the division of comparative medicine at WU. "I've become an unofficial ambassador for the veterinary profession on the Net," he says.

THE VET'S BULGING MAILBAG

ALTHOUGH BOSCHERT'S e-mail address is inconspicuous on the site, he still receives about 50 e-mail notes each week. "If someone asks me something, I'm going to answer it, although so many of the questions aren't answerable. I always tell writers to review the case with their local veterinarian. I can't assume liability for an animal I've never seen."

Boschert devotes dozens of hours each month to updating links and answering e-mail, working at night and on weekends from his PC at home. He writes HTML code in JG Soft's freeware EditPad text editor. He also uses WordPerfect (he likes its fonts), and Microsoft's PowerPoint presentation software. A graphic artist friend helps out with logos and other images for the site, but Boschert designs most of the graphics himself in Jasc's Paint Shop Pro and MMedia Research's LView Pro.

The toughest chores are keeping the site's many thousands of links updated and finding new links. Boschert's favorite search tool is Forefront Group's WebSeeker, which searches major Web search engines, weeds out any duplicate sites, and prepares reports that ▶

DELL DIMENSION DESKTOPS FOR BUSINESS

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max[§] Variable CD-ROM Drive ◆ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ◆ Microsoft Windows 95 ◆ Microsoft Mouse (MS IntelliMouse on XPS Systems) ◆ 2 Universal Serial Bus (USB) Ports ◆ 3 Year Limited Warranty[†] with 1 Year On-site[Δ] Service ◆
Upgrades: ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $99. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ APC Back-UPS Pro 650, add $299. ◆ 3 yrs. On-site Service, add $99.

NEW DELL DIMENSION® XPS D300
300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 128MB SDRAM, add $499.*

$3499

Business Lease[◊]: $123/Mo.
Order Code #500909

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*

$2899

Business Lease: $105/Mo.
Order Code #500908

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- AWE64 Value Sound Card
- Altec Lansing ACS-90 Speakers

★ *Upgrade to an 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $99.*

$2499

Business Lease: $90/Mo.
Order Code #500907

DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 4MB WRAM Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to a 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2199

Business Lease: $79/Mo.
Order Code #500906

THEIR PERFORMANC
EVEN SQUEEZE MORE

DELL DIMENSION DESKTOPS FOR HOME

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max[§] Variable CD-ROM Drive ◆ *NEW* 56K Capable** U.S. Robotics x2 WinModem ◆ MS Home Essentials plus Best of Entertainment Pack ◆ Microsoft Windows 95 ◆ MS IntelliMouse ◆ 3 Year Limited Warranty with 1 Year On-site Service
Upgrades: ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3-Pak of Zip 100MB Cartridges, add $39. ◆ HP DeskJet 820Cse Color Printer, add $299.

NEW DELL DIMENSION XPS D300
300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 64MB SDRAM Memory
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1200HS Monitor (17.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- AWE64 Value Sound Card
- Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$3799

***NEW* Personal Lease: $169/Mo.[°ø]**
Order Code #500904

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000TX Trinitron Monitor (15.9" v.i.s., .26dp)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-290 Speakers with Subwoofer
- Iomega Zip 100MB Internal Drive with One Cartridge

$2999

***NEW* Personal Lease: $134/Mo.[°Σ]**
Order Code #500903

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Ultra ATA Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to 64MB SDRAM, add $199.*
★ *Upgrade to Altec Lansing ACS-290 Speakers with Subwoofer, add $75.*
★ *Upgrade to 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*

$2399

***NEW* Personal Lease: $107/Mo.[°∞]**
Order Code #500902

DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR **WITH MMX TECHNOLOGY**

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Nitro 4MB EDO PCI Video Card
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec Lansing ACS-90 Speakers

★ *Upgrade to a 64MB SDRAM, add $199.*
★ *Upgrade to 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $79.*

$1999

***NEW* Personal Lease: $89/Mo.[°π]**
Order Code #500901

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

†Pricing is not discountable. ‡For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P. Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ^ 20X Max/11X Min. Ω12X Max/8X Min. §24 Max/12X Min. **x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ††Advertised configuration varies from tested configuration. ^4MB Baseboard with a 4MB Upgrade Module. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

°Amount of monthly lease payment, based on 24-month lease from Dell Financial Services L.P., an independent entity; amount due prior to delivery: ø$338; Σ$268; ∞$214; π$178 (amounts exclude taxes which may vary; for example, Hartford City, IN fees ø$8.45); no security deposit required, subject to credit approval and availability. Lease terms subject to change.

ELL DIMENSION M200a
0MHz PENTIUM PROCESSOR
ITH MMX TECHNOLOGY

mmon features listed above plus:
- 16MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 3Com 3C509B EtherLink III 10Mbit ISA Combo Card
- Iomega Zip 100MB Internal Drive with One Cartridge

Upgrade to 32MB SDRAM, add $99.
Sound Blaster 16 PnP and Altec Lansing ACS-90 Speakers, add $89.

$1799

usiness Lease: $65/Mo.
der Code #500905

SOFTWARE DESCRIPTIONS

MS Office 97 Small Business Edition (SBE) includes:
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

MS Home Essentials plus Best of Entertainment Pack (available on desktops only) includes:
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0
- TETRIS, Taipei, SkiFree, Dr. BlackJack and more.

DELL POWEREDGE SERVERS

Common features: ◆ 512KB Integrated L2 ECC Cache ◆ Integrated PCI Ultra-Wide SCSI-3 Controller ◆ Intel® Pro/100B PCI Ethernet Adapter ◆ Intel LANDesk® Server Manager v2.5x ◆ **3 Years Next Business Day On-site Service**

DELL® POWEREDGE® 2200 SERVER
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 64MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- MS Windows NT® Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

$4749

Business Lease: $166/Mo.
Order Code #250081

DELL POWEREDGE 2200 SERVER
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- MS Windows NT Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

★ *APC Smart-UPS 700w Power Supply, add $399.*

$3749

Business Lease: $134/Mo.
Order Code #250085

S SO STRONG, IT'LL ROM YOUR DOLLAR.

DELL LATITUDE NOTEBOOKS

Common features: ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts CD-ROM (20X Max∞ Variable on LM M166ST or 12X Max Ω Variable on LM M133ST), 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

DELL LATITUDE® LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 72MB EDO RAM
- *NEW* 4GB Hard Drive
- MS Office 97 Small Business Edition

★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*
★ *3Com Lan+ 33.6 Modem PC Card, add $299.*
★ *Dell Latitude LM Port Replicator, add $159.*

$3999‡

Business Lease: $141/Mo.
Order Code #800168

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB EDO RAM (72MB Max)
- 2.1GB Hard Drive
- Motorola 33.6 Fax Modem
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB EDO RAM, add $299.*
★ *Upgrade to a NEW 4GB Hard Drive, add $349.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*

$3499†

Business Lease: $123/Mo.
Order Code #800169

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB EDO RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *NEW 56K Capable** x2 Modem, add $149.*
★ *Dell Latitude LM Port Replicator, add $159.*

$2899‡

Business Lease: $105/Mo.
Order Code #800140

NEW DELL LATITUDE LM M133ST
133MHz PENTIUM PROCESSOR W/MMX

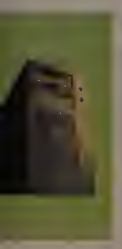
Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 24MB EDO RAM, add $99.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Nylon Carrying Case, add $69.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *3Com 10Base-T Network Card, add $129.*

$2599‡

Business Lease: $94/Mo.
Order Code #800154

Call for details on Dell's Business Leasing and new Personal Leasing programs.



TO ORDER TOLL-FREE
800-247-2593
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03301

DELL®

transfer easily to a database. He also uses Symantec's Internet FastFind because it provides more-detailed reports.

Boschert has never promoted the site. Animal lovers find him, arriving through directories or search engines that highlight it. "Initially, it was mostly college people, propeller heads who tapped in," he says. "The second wave was government types. Then I started to see the public coming on, as well as veterinarians. Now I'm seeing more teachers and kids."

Just before we went to press, Boschert completed an agreement to turn the site over to the American Veterinary Medical Association. He will license the site to the AVMA at no cost, in exchange for a guarantee that it will remain free, and will serve as an unpaid consultant in the site's future development.

"The service has enabled me to make many friends and taken me all over the world to speak to groups," he says. "I couldn't be happier that I've provided a service that represents the veterinary profession so well."

A Garden Spot on the Web

SITE: Joe & Mindy's WebGarden
ADDRESS: www.nhn.ou.edu/%7Ehoward/garden.html
CREATORS: Joe and Mindy Howard
TOOLS: HoTMetaL Pro, Matt's Script Archive Web site, Photo-Paint, Windy's Fashionable Page Design Web site

Judging from the wealth of gardening information at Joe & Mindy's WebGarden, horticultural fans may well envision its authors as leathery veterans of dozens of spring plantings, and the site's server as tucked between stacks of pots in a greenhouse.

In reality, Joe and Mindy Howard are twentysomething graduate students at the University of Oklahoma who started growing petunias outside their apartment just a few years ago. Their "cybergarden" runs on a server in the university's physics department.

"We're still learning to be good gardeners," says Joe modestly. The soft-spoken astrophysics student and his wife, an analytical chemist, share a passion for nurturing hard-to-grow blooms. "Hopefully our Web site is helping others learn how to garden as well."

GARDENERS CAN exchange advice and ideas in WebGarden's message forum.

One would never suspect that the Howards consider themselves newbie gardeners. Dazzling pictures of their real-life garden's nasturtiums, morning glories, pansies, and irises spill from their site. Using on-screen captions, their cat Kozmo provides garden-tour commentary. WebGarden also includes a busy message forum for gardeners, along with over 1400 links, neatly organized into categories such as herbs and spices, wildflowers, bonsai, and butterflies.

Four years ago, Mindy asked their apartment manager if she could plant a few flowers near the door of their Norman townhouse. It wasn't long before the Howards had filled the barren landscape around their apartment complex with geraniums, celosia plumosa, and yes, more petunias. Two years ago, they started WebGarden as a single page with five links.

The Howards create the site's pages with SoftQuad's HoTMetaL Pro HTML-authoring package on a Windows 95 PC at home. Most of the pictures are photographs of the Howards' gardens that they've snapped with an old camera. They scan these photos with a Hewlett-Packard ScanJet 4C and spruce them up in Corel's Photo-Paint image editing software. Garden-related graphics come from Windy's Fashionable Page Design (www.windyweb.com/design). ▶

PHOTOGRAPH: STEVE JENNINGS/GAMMA-LIAISON; ILLUSTRATION: PETER HOEY

A Start-Up Tool Kit for Public-Spirited Websmiths

INTERESTED IN FOLLOWING in the footsteps of the Web site creators profiled here? If you've got a good idea and can put some time into the project, you don't need much money or technical expertise.

Rule number one is to choose a topic that's close to your heart. You're likely to spend a great deal of time working on the site, so find a subject that will make the process enjoyable.

Where to Put Your Site: Web Hosting Services for Little (or No) Cost

EVERY WEB SITE NEEDS a home. Fortunately, low-cost possibilities are numerous. Most personal Internet access accounts include a few megabytes of server space, which can house a simple site. For example, **EarthLink's** $19.95-a-month TotalAccess plan provides 2MB of space, along with unlimited dial-up access to the Internet. You also get Web space with **America Online** and **CompuServe** accounts. There are even some advertising-supported services that will host your site for free, most notably **GeoCities** (www.geocities.com).

Internet service providers also offer dedicated Web site hosting services. Aimed primarily at corporate customers, these offer such bonuses as custom domain names (like www.yournamehere.com), the ability to use server-based scripting for more sophisticated features such as discussions, and the capacity to handle large numbers of visitors. Per-month charges range from under $20 to hundreds of dollars, depending on the amount of space your site consumes, the amount of traffic it attracts, and the level of service the ISP provides.

Tools to Create Your Site: Web Authoring Without Anguish

IF YOU'VE never created a Web page before, the easiest way to start your journey is with the HTML tools found in your Web browser or word processor. The new Web browser suites, **Netscape Communicator** and **Microsoft Internet Explorer 4.0,** both come with simple HTML editors built in. They offer templates and wizards that build simple pages for you. However, features in these editors are quite limited—neither lets you create forms, for instance.

The current versions of all the major word processors—**Corel WordPerfect, Lotus Word Pro,** and **Microsoft Word**—also let you export a document in HTML format. This is a straightforward way to build simple pages, but these exports are not without their snafus. A document's formatting does not always translate properly to HTML code, nor do word processors let you easily break up text into multiple Web pages.

As your Web-site ambitions grow, you'll probably want to develop at least a basic knowledge of HTML formatting tags, and you may want to create your pages in a software package designed specifically for Web authoring. To see what HTML tags look like and how they work, examine the code of any page on the Web by pulling down your browser's *View* menu and selecting *Page Source.* To compose a page directly in HTML, type your text and the HTML tags to format it into your word processor, and save the document as a text file with an .htm suffix. Preview it in your browser by selecting *File* and choosing *Open Page* or *Open File.*

TOP TOOLS FOR WEB AUTHORING AND MORE

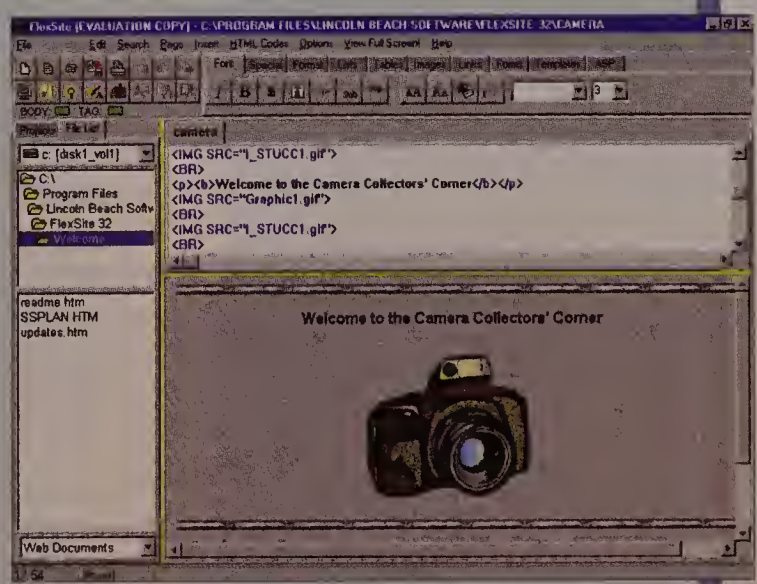
SHAREWARE HTML authoring packages abound; one that's hard to outgrow is Lincoln Beach's **FlexSite 2.5.** As you work, FlexSite displays your Web page in a window below its HTML code. FlexSite's standard version costs $50; the professional version, which supports forms, frames, and image maps, is $90.

If you want more power, consider Microsoft's $149 **FrontPage 97**—it's outstanding among commercial packages. You can build tables, forms, and even rudimentary discussion groups without arcane programming. Site-management tools include the ability to view pages in tree diagrams.

Of course, a good HTML editor is only one of the tools you'll need to build a site. Jasc Software's shareware **Paint Shop Pro 4.12** offers all the graphics tools most Web authors need, for a thrifty $69. You can use it to crop, brighten, and resize images, as well as to convert images from one format to another.

Tetranet Software's **Linkbot 3.0** will check your site's links, plus map the site and inform you of orphan files. You can download a free 30-day trial version from Tetranet. The standard version retails for $99.95.

—Judy Heim and Harry McCracken



FLEXSITE shows both HTML code and a preview as you create a Web page.

Four Steps to a Great Public-Service Site

If you decide to create your own public-service site, take these cues from the successful sites profiled here.

Create exclusive content.

1 LINKS TO OTHER sites are great, but it's the unique items that set a site apart, such as StorkNet's original articles and WebGarden's virtual garden tours.

Update your site frequently.

2 WHEN VISITORS STOP by often to see what's new, you've got the beginnings of a virtual community. Just make it easy for them to find the newest items.

Get visitors involved.

3 YOUR SITE will mean more if visitors can participate in interactive features, such as WebGarden's message forum and OncoLink's questionnaires.

Cross-pollinate with related sites.

4 A GREAT WAY to publicize a site is to work with other creators. StorkNet, for example, is part of two collectives that plug their sites with links and ads.

The site's search and add-a-link features and its message forum rely on server-based scripts downloaded from Matt's Script Archive (www.worldwidemart.com/scripts). The Howards recommend this as the first stop for any budding Web page programmer who wants to make a site interactive.

They spend about 10 hours a week working on the site; except for submitting its URL to Submit-It, they haven't promoted their site. Future plans for the site include automating link updating with a program such as Linkbot, and adding more pictures and features written by other gardeners.

Although Joe and Mindy Howard have never met any of the gardeners who frequent their site, they've made many friends. Even Kozmo gets e-mail from other garden-loving cats. "We get a lot of messages in our guest book that say, 'I've finally found a Web site that has everything at my fingertips,'" says Mindy.

Site Design Help

IF YOU'RE A NEWCOMER to creating and running a Web site, you need lots of advice. Appropriately enough, some of the most helpful resources you'll find are on the Web.

Web Design Group An HTML guide, design tips, and a message forum. www.htmlhelp.com

World Wide Web FAQ Answers to basic questions about creating a Web site. www.boutell.com/faq/

Background FAQ Everything you ever wanted to know about creating backgrounds for your pages. www.sci.kun.nl/thalia/guide/color/faq.html

Royal Frazier's GIF Animation on the WWW Learn the fine points of GIF animations. members.aol.com/royalef/gifanim.htm

The 1st Internet Gallery of GIF Animation Ready-made animations that you can add right to your site. members.aol.com/royalf1/galframe.htm

Parents-to-Be Share Advice and Joy

SITE: StorkNet: The Online Resource for Parents-to-Be and New Parents
ADDRESS: pages.prodigy.com/storknet
CREATOR: Maribeth Doerr
TOOLS: Hippie, Paint Shop Pro, Prodigy file libraries

MARIBETH DOERR compiles the experiences of StorkNet visitors into articles on many pregnancy-related topics.

Maribeth Doerr's favorite e-mail comes from expectant dads. "They want to understand their wife's pregnancy, but at the same time they feel so left out," says the creator of StorkNet. Doerr theorizes that many dads-in-waiting feel comfortable tapping into her pregnancy support Web site because they can seek information in private, while their wives probably think they're at the computer calling up sports scores. "There have been instances in which both moms and dads have written me for advice, neither realizing that the other was also writing me," she laughs.

StorkNet, which has been online for about a year and a half, is an outgrowth of Doerr's work as a Reno, Nevada, journalist, political activist, and author of books on pregnancy. But the site draws its inspiration just as directly from her private life. Doerr, who has two young sons, also knows firsthand what it's like to lose a baby to birth complications. Through StorkNet, she now helps other expectant parents enjoy successful pregnancies.

Doerr, a self-taught Web author, found putting up StorkNet's pages and links easy. But she wasn't prepared for her own feelings about running the site. ▶

The World's First Do-It-Yourself Ad.

Rather than try and sell you on Canvas 5, we invite you to sell yourself with a 30 day free trial offer.

CANVAS 5

Only one person knows what you want in a graphics program: you. • So go on — try Canvas 5 (fully functional, not some weenie sampler) for 30 days, free. If you like, you buy. If you don't, you don't. • Canvas 5 has everything you need to tackle any graphics task, from technical drawing and photo editing, to desktop publishing and web design. All fully integrated. All easy to use. And all yours for the asking. • Call 1.800.6CANVAS (622-6827) or 305.596.5644 ext. 2, and ask for your free Evaluation CD or visit our web site at www.deneba.com/pcworld/ to download it gratis. And if you've already sold yourself, visit your favorite reseller or call us and pick up a copy today.

Copyright 1997 Deneba Software. Limited time offer valid only in North America
This ad was made using nothing but Canvas 5. Any questions?

DENEBA

Circle 71 on reader service card

STORKNET'S Maribeth Doerr with sons Eric (foreground) and Chad.

"As a bereaved parent who can no longer have children, some of the pregnancy aspects were painful for me to deal with initially," she remembers. "I needed to back away." But as she started to hear from parents who appreciated her site, her enthusiasm returned.

Several hundred expectant and new moms and dads visit the site each day. Many initially tap in because of anxiety about their pregnancy, such as a woman who was searching for information about miscarriages because she was bleeding. She found solace in the stories of women who'd had similar experiences. When her pregnancy continued normally, she continued to visit for tips on handling morning sickness.

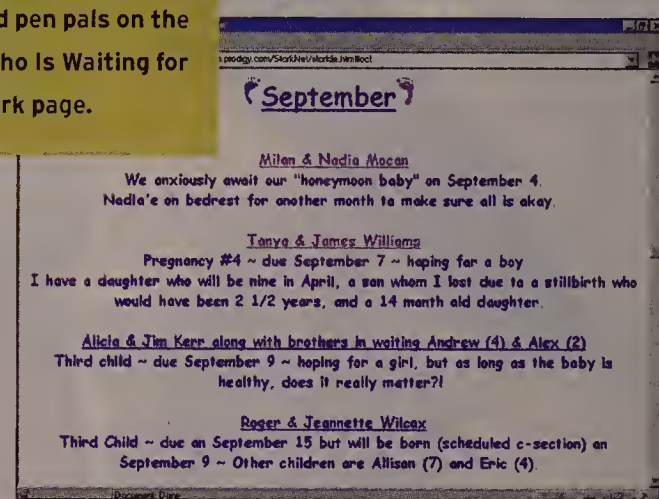
ADVICE, PEN PALS, AND MORE

STORKNET'S 30-PLUS pages include links to topics ranging from breast-feeding to day care, from multiple births to getting baby to sleep. One page lists StorkNet frequenters who are expecting, and includes e-mail links in case an expectant parent is looking for a pen pal. Another offers happy details of new babies. Expecting parents can also buy books through a cooperative arrangement with Amazon.com, although this hasn't garnered many sales so far. "I hate to be too commercial in nature, but it would be nice to get some remuneration for running the site," Doerr acknowledges.

Working on the site consumes about 10 hours of Doerr's time each week. She creates pages with Hippie, a WYSIWYG authoring program. She'd love to add more interactivity, but "when nauseated pregnant women get on a computer, the flicker can exacerbate nausea, so I hate to make the site's pages too busy."

Doerr has done little to promote StorkNet, but she's found that its reputation spreads almost magically by word of mouth. "I was at a party a few months ago, and when a pregnant woman asked what I did on my computer, I explained StorkNet. Her mouth dropped. 'You're StorkNet?' she gasped. 'I love that page!'"

EXPECTANT PARENTS can spread the news and find pen pals on the Look Who Is Waiting for the Stork page.



September

Milan & Nadia Macan
We anxiously await our "honeymoon baby" on September 4.
Nadia's on bedrest for another month to make sure all is okay.

Tanya & James Williams
Pregnancy #4 ~ due September 7 ~ hoping for a boy
I have a daughter who will be nine in April, a son whom I lost due to a stillbirth who would have been 2 1/2 years, and a 14 month old daughter.

Alicia & Jim Kerr along with brothers in waiting Andrew (4) & Alex (2)
Third child ~ due September 9 ~ hoping for a girl, but as long as the baby is healthy, does it really matter?!

Roger & Jeannette Wilcox
Third Child ~ due on September 15 but will be born (scheduled c-section) on September 9 ~ Other children are Allison (7) and Eric (4).

Contributing editor Judy Heim is co-author of The Quilter's Computer Companion *(No Starch Press, 1997, 800/420-7240). Harry McCracken is a senior associate editor for* PC World. ■

Where to Buy

EditPad 3.11
free, JG Soft, www.tornado.be/~johnfg

FlexSite 2.5
standard version registration $50, professional version registration $90; Lincoln Beach Software, www.lincolnbeach.com
READER SERVICE NO. 727

FrontPage 97
$149 list, Microsoft, www.microsoft.com/frontpage
READER SERVICE NO. 728

Hippie 4.10
$29.95 list, Trout Software, pages.prodigy.com/hippie
READER SERVICE NO. 729

HoTMetaL Pro
$159 list, SoftQuad, www.softquad.com
READER SERVICE NO. 730

Internet FastFind
$49.95 list, Symantec, www.symantec.com/iff/fs_iff.html
READER SERVICE NO. 731

Linkbot 3.0
$99.95 list, Tetranet Software, www.tetranetsoftware.com
READER SERVICE NO. 732

LView Pro 2.0
$30 list, Mmedia Research, www.lview.com
READER SERVICE NO. 733

Paint Shop Pro 4.12
$69 list, Jasc Software, www.jasc.com
READER SERVICE NO. 734

Photo-Paint 7 Plus
$495 list, Corel, www.corel.com
READER SERVICE NO. 735

WebSeeker 3.2
$49.95 list, ForeFront, www.ffg.com/internet.html
READER SERVICE NO. 736

PHOTOGRAPH: GLENN MARTIN/PHOTOGRAPHY

THEY TELL YOU TO

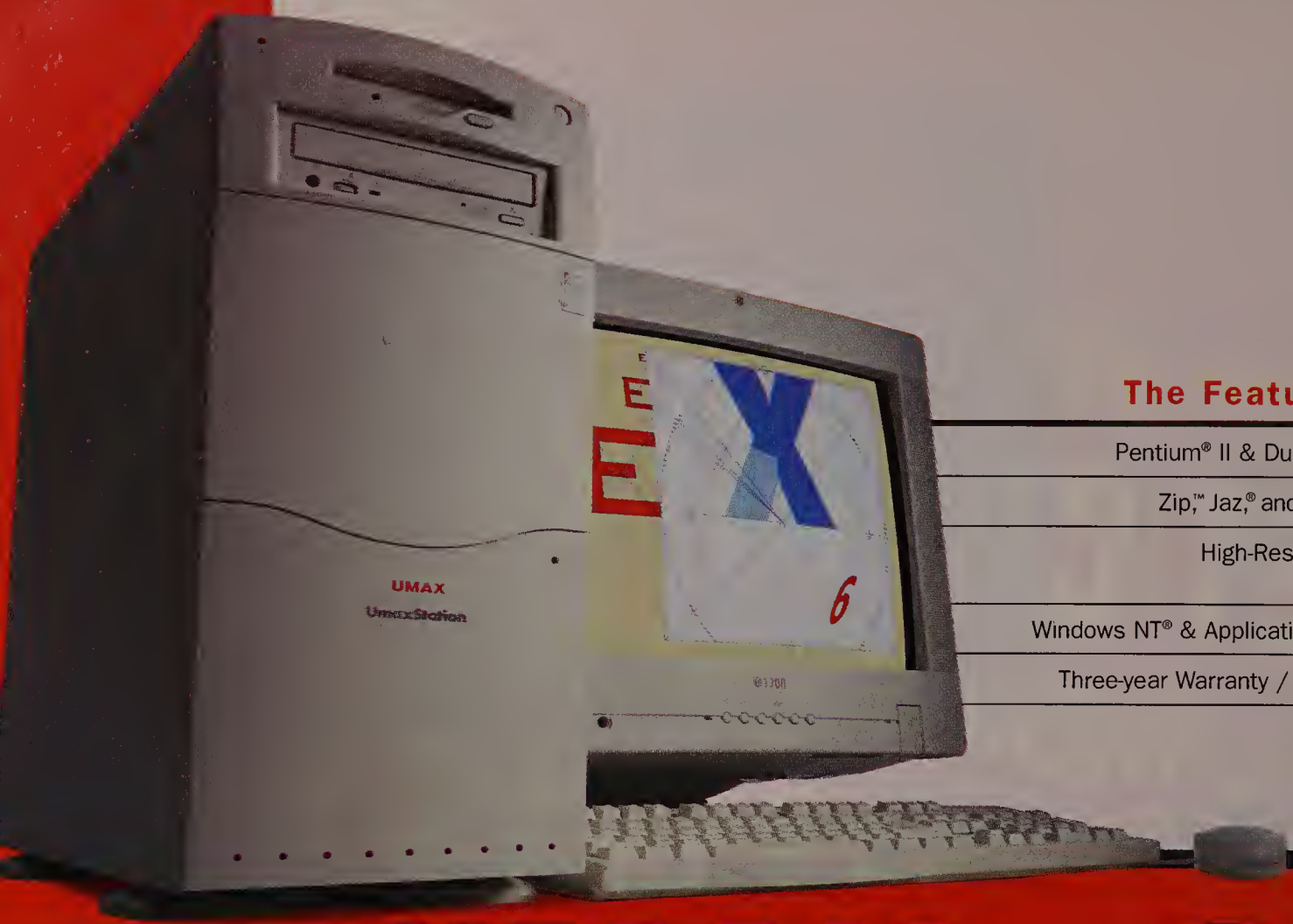
GET CREATIVE.

TELL THEM YOU NEED A

MACHINE

DESIGNED FOR CREATIVE PROFESSIONALS.

UMAX®



The Features You Need:

- Pentium® II & Dual Pentium II Processors
- Zip,™ Jaz,® and DVD Multimedia Drives
- High-Resolution Display Adapters & Flat Square Monitors
- Windows NT® & Application Software from Adobe
- Three-year Warranty / One-year Onsite Service

UMAX—GRAP

NT SYSTEMS DESIGNED FO

UmaxStation 6010

- Intel 233MHz Pentium II processor
- 32MB EDO RAM/512KB Pipeline Burst Cache
- 4GB EIDE Hard Disk Drive
- 24X CD-ROM Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- Matrox Millenium 4MB WRAM Graphics Card
- 17" Flat Square Color Monitor (15.9" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows® 95 available)
- Adobe® PhotoDeluxe,™ Adobe PageMill™ 2.0, Adobe Type Manager,® Lotus SmartSuite®

#S6010.....$2495
Business leases starting at $60/month

UmaxStation 6210

- Intel 266MHz Pentium II processor
- 128MB EDO RAM/512KB Pipeline Burst Cache
- 5GB EIDE Hard Disk Drive
- 24X CD-ROM Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- Matrox Millenium 8MB WRAM Graphics Card
- 17" Flat Square Color Monitor (15.9" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers with Sub-Woofer
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PhotoDeluxe, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#S6210.....$3795
Business leases starting at $92/month

UmaxStation 6410

- Intel 300MHz Pentium II processor
- 128MB EDO RAM/512KB Pipeline Burst Cache
- Adaptec® 2940 Ultra-Wide SCSI-3 Controller
- 4GB Ultra-Wide SCSI Hard Disk Drive
- 24X CD-ROM Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- ELSA Gloria-L 8MB VRAM/8MB DRAM 3D Graphics Accelerator
- 19" Dynamic Focus Color Monitor (18" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers with Sub-Woofer
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PhotoDeluxe, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#S6410.....$5495
Business leases starting at $133/month

Toll Free: 1-888-289-8629 Keycode #303

1-888-BUY-UMAX

www.umaxpc.com

GET CREATIVE

UMAX®

NT Systems for Creative Professionals

Umax understands that creative work requires a special kind of system. That's why we've drawn upon 10 years' experience to develop a new line of NT-based, Adobe-driven workstations that give designers, animators, illustrators, and production artists everything they need. The high-end **UmaxStation** models feature state-of-the-art dual Pentium II 266Mhz processors for maximum power and come bundled with Adobe's latest graphics applications. The **UmaxPC** line of value-priced systems includes many of the same graphics-ready components— Zip drives, high-end video cards, 56K modems— at very affordable prices. Whatever your plans, whatever your budget, we've got a graphics system that will inspire your creativity. These are the machines you need, from a company that knows how to build them.

ICS POWER
REATIVE PROFESSIONALS.

UmaxStation 9010

- Dual Intel 266MHz Pentium II processors
- 64MB EDO RAM/512KB Pipeline Burst Cache
- Adaptec 2940 Ultra-Wide SCSI-3 Controller
- 4GB Ultra-Wide SCSI Hard Disk Drive
- 24X CD-ROM Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- Matrox Millenium 4MB WRAM Graphics Card
- 17" Flat Square Color Monitor (15.9" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers with Sub-Woofer
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PageMaker® 6.5, Adobe Photoshop® 4.0, Adobe Illustrator® 7.0, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#S9010.....$4995
Business leases starting at $122/month

UmaxStation 9310

- Dual Intel 300MHz Pentium II processors
- 128MB EDO RAM/512KB Pipeline Burst Cache
- Adaptec 2940 Ultra-Wide SCSI-3 Controller
- 9GB SCSI Hard Disk Drive
- 24X CD-ROM Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- Matrox Millenium 8MB WRAM Graphics Card
- 21" DiamondTron Color Monitor (19.7" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers with Sub-Woofer
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PageMaker 6.5, Adobe Photoshop 4.0, Adobe Illustrator 7.0, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#S9310.....$7995
Business leases starting at $194/month

MMX™ intel inside pentium® II PROCESSOR

Turn the page to find out more about affordable UmaxPC systems.

1-888-BUY-UMAX

Toll Free: 1-888-289-8629 Keycode #303

GET CREATIVE

UMAX®

UMAXPC.

AFFORDABLE NT GRAPHICS SYSTEMS

FOR CREATIVES.

UmaxPC 2010

- Intel 200MHz Pentium processor with MMX™ technology
- 32MB EDO RAM/512KB Pipeline Burst Cache
- 3GB Ultra DMA Hard Disk Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- 24X CD-ROM Drive
- ATI 3D XPression 4MB EDO Graphics Card
- 15" Flat Square Color Monitor (13.7" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PhotoDeluxe, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#P2010.....$1795
Business leases starting at $43/month

UmaxPC 2210

- Intel 200MHz Pentium processor with MMX
- 32MB EDO RAM/512KB Pipeline Burst Cache
- 4GB Ultra DMA Hard Disk Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- 24X CD-ROM Drive
- Matrox Millenium 4MB WRAM Graphics Card
- 17" Flat Square Color Monitor (15.9" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PhotoDeluxe, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#P2210.....$2195
Business leases starting at $53/month

UmaxPC 2410

- Intel 233MHz Pentium processor with MMX
- 64MB EDO RAM/512KB Pipeline Burst Cache
- 5GB Ultra DMA Hard Disk Drive
- 100MB Zip Drive, 3.5" Floppy Drive
- DVD Multimedia/CD-ROM Drive
- ATI 3D XPression 4MB EDO Graphics Card
- 19" Multi-Step Dynamic Focus Color Monitor (18" v.a.)
- 56Kbps Data & Fax Modem
- 10/100TX PCI Ethernet Card
- Creative Labs 3D Sound, Audio In/Out & Mic ports
- Amplified Stereo Speakers with Sub-Woofer
- Mid-tower Case with 250W Power Supply
- EPP/ECP printer port, (2) 16550 serial ports, (2) USB ports
- PS/2 Keyboard & Microsoft IntelliMouse
- Windows NT Workstation (Windows 95 available)
- Adobe PhotoDeluxe, Adobe PageMill 2.0, Adobe Type Manager, Lotus SmartSuite

#P2410.....$3295
Business leases starting at $80/month

Options for UmaxStation and UmaxPC systems:

- 15" Flat Square Color Monitor (13.7" v.a.) $285
- 17" Flat Square Color Monitor (15.9" v.a.) $485
- 19" Dynamic Focus Color Monitor (18" v.a.) $985
- 21" DiamondTron Color Monitor (19.7" v.a.) $1345
- 4x/6x Yamaha Recordable CD-ROM $675
- Iomega® Jaz Drive $345
- Adobe Premiere® 4.0 .....$495
- Adobe After Effects® $645
- Iomega Ditto™ 3200 Tape Drive $195
- Adaptec 2940UW SCSI Controller $185
- Yamaha Stereo Speakers with Sub-Woofer $115
- Three-Year Onsite Extended Warranty $125

Ordering

To order, call 1-888-BUY-UMAX between 6 am and 6 pm Monday-Friday, and 9 am and 6 pm Saturday-Sunday (Pacific time). To configure your system online, visit our web site at www.umaxpc.com. We welcome payment by Visa, MasterCard, Discover, American Express, wire transfer, money order, or check. Check orders are held 5-10 days for clearing. Purchase Orders from major corporations, government offices, and educational institutions are gladly accepted.

Warranty

All UmaxPC and UmaxStation systems are backed by the Umax 30-day Moneyback Satisfaction Guarantee and are covered by a three-year limited warranty with one year of onsite service. For a complete copy of our guarantees, limited warranties, or service policies, please write to Umax Systems Sales, 3485 Kifer Road, Santa Clara, CA 95051, or visit our web site at www.umaxpc.com.

Shipping

Umax offers a variety of shipping services, ranging from UPS Groundtrack to Federal Express Priority Overnight. Please ask your salesperson for details regarding pricing and availability.

Technical Support

Technical support for UmaxPC and UmaxStation systems is available 24 hours a day, seven days a week. Additional technical support is provided by the publishers of software bundled with Umax systems. Complete information on technical support is included with each system.

Umax Technologies, Inc. is not responsible for omissions or errors in typography or photography. Prices and specifications valid in the U.S. only and subject to change without notice. All purchases are subject to availability, and are subject to Umax Technologies' current terms and conditions of sale. Prices do not include shipping and handling. 30-day money back guarantee policy does not include return freight and original shipping/handling charges, applies only to UmaxPC brand products, and begins on the date of shipment. Onsite service is provided by an independent third-party provider and may not be available in certain remote locations. The Intel Inside logo and Pentium are registered trademarks, and MMX is a trademark of Intel Corporation. MS, Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation. All other trademarks or registered trademarks are property of their respective companies.
© 1997 Umax Technologies, Inc.
All rights reserved.

Toll Free: 1-888-289-8629 Keycode #303

1-888-BUY-UMAX

www.umaxpc.com

Umax Systems Sales
3485 Kifer Road, Santa Clara, CA 95051-0711
408-617-0270 • Fax 408-735-0222

PC WORLD TOP 100

244 Power Desktops
256 Budget Desktops
268 Notebooks
283 Printers
287 Monitors
289 Graphics Boards
291 Modems

MMX PRICES Plummet

BY MICHAEL DESMOND AND BRYAN HASTINGS

DO YOU KEEP WAITING to buy a PC because the prices continue to drop? Now is a great time to take the plunge.

In an unusually heavy round of cuts, several vendors dropped prices by $200 or more on MMX-based desktops and notebooks. Dell, for example, ▶

QUANTEX LEAP: The QP5/200 SM1 is our runner-up budget Best Buy.

chopped $380 off the price of the Dimension XPS M200s, the top budget Best Buy that now costs $2199. On our Notebooks charts, Gateway 2000 took $300 to $450 off most of its Solo line, including several chart-makers. And we saw $200-to-$300 drops in a number of other places as well. Systems are also debuting at very low prices: Quantex's new QP5/200 SM1 MMX, our second-place budget Best Buy, is one of the fastest of the well-supported PCs you can buy for under $2000.

CYRIX'S 6X86MX: LATEST PII CHALLENGER

WHY ARE WE SEEING price breaks that Crazy Eddie could crow about? Intel made unusually deep price cuts in August—slashing MMX processor prices up to 50 percent—and it plans another big round of reductions in November. According to product managers at Dell and Gateway 2000, these cuts played a key role in their systems' price drops.

Take a look at our Budget Desktops chart, and you'll see why Intel has been cutting CPU prices. Over one-third of the PCs on the chart sport non-Intel chips—unthinkable just six months ago—and some of those systems are posting huge PC WorldBench scores that challenge those of Intel's vaunted Pentium II.

Advanced Micro Devices debuted its K6, a processor that offers nearly the speed and multimedia support of the Pentium II for hundreds of dollars less. Now Cyrix weighs in with the 6x86MX (formerly known as the M2). This month we tested two desktop systems based on the 200-MHz version of the 6x86MX and found terrific performance for the price. USA Flex's $1999 Flex Performer system—our number eight budget desktop—scored 235 on the PC WorldBench. CyberMax's $1834 ValueMax C5 200+ MMX tower scored 241; while it missed the chart because of its relatively limited features, it's the second-fastest system you can buy for under $2000. (Only Micro Express's K6-based MicroFlex-PR/233, priced at $1849, is faster.) In terms of performance, the closest Intel-based competitors are Pentium MMX-233 systems. These PCs have an average PC WorldBench score of 237, falling slightly below the average for systems based on 6x86MX-200 and K6-PR233 processors, but costing more than $600 more.

CAN'T JUDGE A NOTEBOOK BY ITS CPU: Fujitsu's LifeBook 435Dx has a PMMX-133 but runs like most PMMX-150s.

Intel's marketing machine tries to convince the consumer that "Intel Inside" is the only way to go, but many people will be quite satisfied with the alternatives. The high-end AMD and Cyrix systems lag behind the Pentium II PCs for multimedia-intensive applications such as Adobe Photoshop and Ray Dream Studio (see "New Digital, USA Flex Systems: Intel Is Not Inside," *New Products*, September), but they shine in running general-purpose business apps. Even big-name vendors are starting to look outside Intel: This month we reviewed Digital's $1670 Venturis FX-2 6166K, based on AMD's 166-MHz K6 chip. Digital's system reliability rating of just fair and its skimpy support policies kept the Venturis off the budget chart.

COMING TO A PC NEAR YOU? Gateway's G6-266XL is the first chart-maker to play DVD movies—but they're jittery.

DVD ON THE PC: DISAPPOINTING VIDEO DISPLAY

A COUPLE OF COMPUTER makers seem to have jumped the gun on DVD, the latest hot consumer-electronics technology, which allows manufacturers to squeeze full-length, high-resolution films onto 5.25-inch discs that look like CDs. We looked at Gateway 2000's pricey G6-266XL and Seanix's CS DVD 200 minitower; each includes a built-in DVD-ROM drive that doubles as a CD-ROM drive.

Although the two systems let you watch movies on a PC, don't put on the popcorn just yet. The DVD movies we played had great full-screen resolution, but on the Gateway images were plagued with jittery frames and jagged, pixelated patches. The Seanix froze up while playing one disc, and refused to play the sound track on another. We recommend holding off on PC-based DVD until vendors get it right.

YOUR GUIDE TO THE TOP 100

QUESTIONS ABOUT OUR CHARTS? The following section should answer most of them. If not, ask us; see page 14 for contact information.

How do the charts work? The Top 20 and Top 10 charts are evolving lists of the best PCs, monitors, modems, printers, and graphics boards we've tested. The Top 20 charts are divided by price. Power desktops cost $2500 or more; power notebooks cost $2750 or more. Every month we test the latest products in each category and compare them to the pool of items we've already reviewed. As new products earn places on the charts, those at the bottom drop off. Price cuts also cause chart changes.

Where do you get your prices? We estimate street prices based on vendor information and our own research, including surveys of retail outlets. We recheck all prices every month.

What does the overall rating mean? It's the sum of all our tests—both hands-on evaluations and automated speed tests. The scale is 1 to 100, so a product that scores in the 90s is generally considered exceptional, one in the 80s is among the best, one in the 70s is above average, and one that scores lower usually doesn't place.

What does the PC WorldBench score mean? It's a measure of how fast a PC is in relation to our baseline machine, a Dell P75t configured with 8MB of RAM, a 540MB hard drive, and no secondary cache. A PC that scores 200, for instance, is twice as fast as the baseline unit.

Where do the scores for reliability, support quality, and support policies come from? The reliability and support quality scores come from readers who respond to the Reliability and Service fax-back survey in each issue of *PC World*. The policies score is based on the vendor's support policies (such as length of warranty and support hours).

What do all those word scores mean? Word scores for performance and price are based on a product's rating in relation to other products in its category. For example, a budget PC that is rated "expensive" is high priced only in relation to other budget PCs. Likewise, a power notebook rated "good" for performance is good only in relation to other power notebooks. Word scores for other categories, such as features, are relative to all desktops or all notebooks.

Where can I find the online version of the Top 100? Go to PC World Online (www.pcworld.com). There you'll find not only the current issue of *PC World* and reviews for the last 10 months, but some extra features you'll want to check out. For one thing, PC World Online includes reviews you won't find in print. If a product misses a chart and we don't cover it here, you can go directly to an online review by using the URL provided in each Top 100 section.

Have you ever wished you could build your own chart based on your buying criteria? You can, with Buyer's Guide, our Web site's unique chart customizer. Buyer's Guide combines your criteria with *PC World*'s current data and test results to generate customized Top 20s and Top 10s. For instance, if you want your chart to rank notebooks that have 120-MHz processors and 1.6GB hard drives, the guide's Personal Adviser will find and rank all the machines that fit your specifications.

TURNING BACK THE CLOCK SPEED

WHILE INTEL was making a lot of noise about faster CPUs, it quietly released a new Pentium MMX-133 notebook processor—and in so doing, pushed the entry-level processor for MMX-based portables down from 150 MHz. The PMMX-133 should result in a new crop of fast but inexpensive notebooks. The first of these we've seen is Fujitsu's $1999 LifeBook 435Dx. With a PC WorldBench score of 191, it kept pace with the typical PMMX-150 notebook we've reviewed.

IMPROVE YOUR IMAGES

GRAPHICS BOARD VENDORS keep telling us how terrific their products are at handling 3D. Indeed, some are—but in "2D and 3D Graphics Boards: You Can't Always Get What You Want" we evaluate the latest crop of accelerators and find that no one board does it all. ATI's $219 3D Pro Turbo PC2TV earned our top Best Buy: It's affordable, offers one of the best combinations of 2D and 3D performance, and is the best choice for animation-based multimedia presentations. But if video's your thing, go for the $170 Diamond Stealth 3D 3000, which placed second overall. For 3D buffs, Hercules's $249 Stingray 128/3D at number nine is our pick.

PENNY WISE, PRINT FOOLISH: Canon's BJC-250 is only $179, but you have to swap black and color ink cartridges.

If you're searching for a low-cost color ink jet, check out this month's Top 10 Printers. We tested Canon's latest crop, including the new color Best Buy, Canon's BJC-4300. This $199 unit is one of the least expensive color ink jets we've seen from a major vendor, and it prints nicely on plain paper as well as on ink jet stock. The BJC-250, which we also tested, is even cheaper at $179, but not as convenient.

Michael Desmond and Bryan Hastings are senior associate editors for PC World. *Assistant Editor Grace Aquino, Editorial Researcher Julie Campagna, Editorial Assistant Mick Lockey, Associate Editors Melissa Riofrio and JoAnne Robb, and freelance writers Jon Jacobi and Dan Littman contributed to the Top 100. Testing for the Top 100 by Ulrike Diehlmann, Robert James, Elliott Kirschling, Jeffrey Kuta, Mike Salayko, and Susan Silivius. See page 14 for contact information.* ▶

PC WORLD

TOP 20 POWER DESKTOPS

	SYSTEMS	Last month	Month tested	Street price (7/16/97)	CPU	Comments
1	Dell Dimension XPS H266 800/388-8542 www.dell.com	1	July 97	$3149	Pentium II-266	Ultrafast, with superb multimedia, Zip drive, 56-kbps modem.
2	Dell Dimension XPS M233s 800/388-8542 www.dell.com	2	Sep 97	$2599	Pentium MMX-233	Top service and reliability, best PMMX-233 performance, big hard drive.
3	Gateway 2000 G6-233 800/846-2000 www.gateway.com	3	Aug 97	$2839	Pentium II-233	$50 drop on fast, loaded PC with Ultra-DMA hard drive.
4	Dell OptiPlex GXi 5200M 800/388-8542 www.dell.com	4	June 97	$3112	Pentium MMX-200	Do-it-all corporate PC has ethernet, multimedia, voice modem; now $52 less.
5	Gateway 2000 G5-233 800/846-2000 www.gateway.com	6	Sep 97	$2508	Pentium MMX-233	$170 more affordable, full multimedia, 56K modem, reliability rating just fair.
6	Quantex QP6/233 SM-3 800/896-4898 www.quantex.com	7	Sep 97	$2499	Pentium II-233	Low-cost, expandable, lots of software, improved support record.
7	Dell OptiPlex GXpro 200 800/388-8542 www.dell.com	10	July 97	$3749	Pentium Pro-200	Corporate powerhouse is slightly faster than its PMMX-200 sibling.
8	NMC Expert Pro II 800/800-4662 www.natmicro.com	15	Sep 97	$2595	Pentium II-266	Very fast PII-266 moves up chart with $294 price cut; support is minimal.
9	Sys Technology Performance Pro 266A 800/613-9963 www.systechnology.com	–	NEW	$3249	Pentium II-266	Superquick PC has big hard drive, great multimedia; weak support policies.
10	Quantex QP6/200 SM-4 800/896-4898 www.quantex.com	13	May 97	$2649	Pentium Pro-200	Nimble business PC costs $150 more than PII-233; improved support.
11	Premio FX2 Shadowhawk 266 800/677-6477 www.premiopc.com	–	NEW	$2779	Pentium II-266	Very fast PII-266 has 64MB of RAM; lacks a modem.
12	DTK Quin-55M/PM233 800/289-2385 www.dtkcomputer.com	–	Sep 97	$2510	Pentium MMX-233	$140 price cut puts this fast tower on the chart; comes with 56K modem.
13	Gateway 2000 G6-266XL 800/846-2000 www.gateway.com	–	NEW	$5128	Pentium II-266	Superfast, with DVD drive, 21-inch display, 9GB hard disk, tape backup; pricey.
14	Digitron PS4000 888/708-2800 www.digitronpc.com	–	NEW	$3999	Pentium II-266	Blazing minitower has great multimedia; expensive.
15	Nova K6-200TX 800/461-5535 www.novacompinc.com	–	Sep 97	$2499	AMD K6-PR200	Big $300 price chop puts lively minitower on chart; support is sparse.
16	Acma EXP 200 800/786-6888 www.acma.com	18	Aug 97	$2495	Pentium MMX-200	Fast, affordable PMMX-200 comes with CorelDraw; limited support.
17	CLR Infinity PT5-A 200MMX 800/611-1555 www.clrusa.com	19	July 97	$2720	Pentium MMX-200	Reasonably fast minitower has good multimedia and support policies.
18	HP Vectra VA 6/200 MT 800/322-4772 www.hp.com	11	Mar 97	$3134	Pentium Pro-200	Good corporate PC; reliability ratings slipped from best to good.
19	Total Peripherals Archer 2000A 800/923-7718 www.totalpc.com	–	Aug 97	$2499	Pentium MMX-200	$430 price slash puts this fast, well-appointed minitower on chart.
20	IBM PC 365 800/426-2968 www.pc.ibm.com	20	Mar 97	$4013	Pentium Pro-200	$208 price drop helps keep business PC on chart, despite support score slip.

Best Buy See features chart, page 246; performance chart, page 248. Recommended as home system

[1] Insufficient data.

INTEL STILL DOMINATES THE POWER DESKTOPS CHART, but competition is brewing. The AMD K6–based Nova K6-200TX landed at 15th place this month, after a $300 price cut lifted this quick minitower into contention. In addition to four new Pentium II-266 systems on the chart this month, two others—the Unicent Avanta 266 XLS and Digital Celebris GL-2 6266—placed not too far behind the pack. The Avanta scored a 264 in the PC WorldBench test suite, joining the Sys Technology Performance Pro 266A (in ninth place) as the fastest PC we've ever tested. Skimpy documentation and poor design, however, kept us from giving the Avanta a Top 20 nod.

SCORECARD

★ Overall rating	PC WorldBench score/performance	Vendor's system reliability	Features and design	Price	Vendor's support quality/policies	Reader service number
97	263/outstanding	best	outstanding	average	best/best	668
96	243/outstanding	best	outstanding	very inexpensive	best/best	669
92	251/outstanding	fair	outstanding	inexpensive	best/best	670
90	226/very good	best	outstanding	average	best/best	671
88	240/outstanding	fair	very good	very inexpensive	best/best	672
88	247/outstanding	fair	good	very inexpensive	best/best	673
85	230/very good	best	good	expensive	best/best	674
84	260/outstanding	[1]	very good	very inexpensive	[1]/fair	675
83	264/outstanding	[1]	very good	average	[1]/poor	676
83	230/very good	fair	good	inexpensive	best/best	677
82	257/outstanding	[1]	good	inexpensive	[1]/poor	678
82	238/outstanding	fair	very good	very inexpensive	[1]/poor	679
81	263/outstanding	fair	very good	very expensive	best/best	680
81	259/outstanding	[1]	outstanding	expensive	[1]/poor	681
80	238/outstanding	[1]	good	very inexpensive	[1]/poor	682
80	233/very good	[1]	very good	very inexpensive	[1]/fair	683
80	229/very good	[1]	very good	inexpensive	[1]/good	684
79	229/very good	good	good	average	fair/fair	685
79	237/outstanding	[1]	good	very inexpensive	[1]/worst	686
79	232/very good	fair	outstanding	very expensive	fair/good	–
Scorecard weightings ▶	Performance 25 percent	Reliability 25 percent	Features 20 percent	Price 15 percent	Support 15 percent	All products: 906

This Month's Best Buys

1 DELL DIMENSION XPS H266

PRO: Lightning fast, fine features, now upgraded with a 24X CD-ROM drive

CON: Case is hard to remove

Dell's top-rated Dimension XPS H266 just continues to get better. At $3149, this Pentium II-266 powerhouse sells for little more than competing models from Gateway 2000 and NMC, and its CD-ROM drive has been upgraded from 12X to 24X. In addition to Dell's unrivaled record of service and support, the XPS H266 offers terrific performance, with a PC WorldBench score of 263 that is among the best for Pentium II-266 systems.

The Dimension is packed with features. The Matrox Millennium II graphics card boasts a substantial 8MB of video memory, and the 17-inch monitor produces exceptionally crisp text and graphics. The Dimension also includes a 56-kilobits-per-second modem that uses 3Com's U.S. Robotics x2 technology. The system's speedy 24X CD-ROM drive, wavetable-equipped Yamaha sound card, and Altec Lansing ACS 90 speakers with subwoofer comprise a great multimedia setup.

Dell Dimension XPS H266

In addition, you get a huge 6.4GB hard drive and a software bundle that includes Microsoft Office 97 Small Business Edition. The company also throws in an Iomega Zip drive, which accepts 100MB floppy-style disks.

We did have a couple of complaints. Dell, like most vendors today, supplies separate manuals for the main system and each peripheral. Also, pulling the case's side panel off and putting it back on takes some finagling.

Dell's service and system reliability continue to score high in our ongoing fax-back survey.

2 DELL DIMENSION XPS M233S

PRO: Fastest PMMX-233, large hard disk, Zip drive, upgraded CD-ROM drive and modem

CON: RAM maxes out at 64MB

An improving balance of power and value helps the Dell Dimension XPS M233s hold steady at second place on our Power Desktops chart. The $2599 minitower sells for $300 less than it did last month and now comes with a faster CD-ROM drive and modem. The improvements are welcome to this blazing Pentium MMX-233 system, which posted a PC WorldBench score of 243—the fastest of any Pentium MMX-233 system we've tested so far.

Dell Dimension XPS M233s

This month, Dell boosted the variable-speed 12X/16X CD-ROM drive to one that supports a top 24X spin rate. Also, the ▶

TOP 20 POWER DESKTOPS — STANDARD FEATURES

	SYSTEMS	CPU	RAM (MB)	Secondary cache (K)	Hard drive (GB)	Graphics adapter	Video RAM (MB/type)	Monitor tube/ viewable diagonal (inches)	Screen pitch (mm)	CD-ROM drive speed
1	Dell Dimension XPS H266*	Pentium II-266	32	512	6.4	Matrox Millennium II	8/WRAM	17/15.9	.25	24X
2	Dell Dimension XPS M233s*	Pentium MMX-233	32	512	6.4	Matrox Millennium II	8/WRAM	17/15.7	.28	24X
3	Gateway 2000 G6-233*	Pentium II-233	64	512	3.2	STB Virge 4MB 3D PCI	4/VRAM	17/15.9	.28	16X
4	Dell OptiPlex GXi 5200M*	Pentium MMX-200	32	512	3.2	Matrox Millennium II	4/WRAM	17/16	.28	8X
5	Gateway 2000 G5-233*	Pentium MMX-233	32	512	3.2	STB Virge 4MB 3D PCI	4/VRAM	17/16	.28	16X
6	Quantex QP6/233 SM-3	Pentium II-233	32	512	4	Matrox Millennium II	4/WRAM	17/16	.25	16X
7	Dell OptiPlex GXpro 200	Pentium Pro-200	32	512	3.1	Matrox Millennium	4/WRAM	17/15.8	.28	8X
8	NMC Expert Pro II	Pentium II-266	64	512	5.1	Matrox Millennium II	4/WRAM	17/15.9	.28	16X
9	Sys Technology Performance Pro 266A	Pentium II-266	32	512	6.4	Number Nine Revolution 3D	8/WRAM	17/15.8	.26	16X
10	Quantex QP6/200 SM-4	Pentium Pro-200	32	256	3.2	Matrox Millennium	4/WRAM	17/16	.28	12X
11	Premio FX2 Shadowhawk 266	Pentium II-266	64	512	3.2	ATI 3D Pro Turbo PC2TV	4/SGRAM	17/15.9	.28	8X
12	DTK Quin-55M/PM233	Pentium MMX-233	32	512	3.1	Diamond Stealth 3D 3000	4/VRAM	17/15.7	.28	12X
13	Gateway 2000 G6-266XL	Pentium II-266	64	512	9	STB Virge Gx	4/EDO DRAM	21/19.7	.28	9X
14	Digitron PS4000	Pentium II-266	32	512	4.3	STB Velocity 3D Video	4/VRAM	17/16.1	.25	16X
15	Nova K6-200TX	AMD K6-PR200	64	512	4.1	Matrox Millennium	4/WRAM	17/15.7	.28	12X
16	Acma EXP 200	Pentium MMX-200	32	512	3.2	Matrox Millennium II	4/WRAM	17/15.9	.25	12X
17	CLR Infinity PT5-A 200MMX	Pentium MMX-200	32	512	3.2	Number Nine Imagine 128 Series II	4/VRAM	17/15.7	.28	16X
18	HP Vectra VA 6/200 MT	Pentium Pro-200	32	256	2.5	Matrox Millennium II	2/WRAM	17/15.7	.28	8X
19	Total Peripherals Archer 2000A	Pentium MMX-200	32	512	4.1	Matrox Millennium	4/WRAM	17/15.5	.28	18X
20	IBM PC 365	Pentium Pro-200	32	256	2.1	Matrox Millennium II	4/WRAM	17/15.7	.28	6X

* Best Buy [1] Downloads only, uploads at 33.6 kbps; uses 3Com/U.S. Robotics' x2 technology. [2] Six years on CPU and main RAM, one to five years on other parts. [3] First year. [4] Toll call.

33.6-kbps modem has been replaced with a 56-kbps unit using 3Com's U.S. Robotics x2 spec. The gigantic 6.4GB EIDE hard disk and 3D–savvy Matrox Millennium II graphics card with 8MB of WRAM are both outstanding, and the internal Iomega Zip drive comes with three 100MB cartridges.

The M233s is equipped with 32MB of SDRAM and 512K of secondary cache. The Altec Lansing ACS 90 speakers produce rich sound, while the 17-inch monitor will please the eyes with its display.

We liked the case design of the XPS M233s. You won't mistake the panel's reset button for an on/off switch. Color-coded I/O ports make monitor and mouse installations quick and easy, while undoing a single thumbscrew allows quick access. The PC's interior is clean and free of clutter. The motherboard sports a pair of Universal Serial Bus ports, though the system doesn't come with any compliant peripherals. The software bundle includes Microsoft Office 97 Small Business Edition, plus Publisher and Photo Editor.

If the XPS M233s has any drawback, it is lack of expandability. RAM is limited to a maximum of 64MB—a once unheard-of amount that could become mainstream.

Dell's documentation is top-notch, and technical support is available 24 hours a day. The warranty covers parts for three years and labor for one year, and our readers consistently rate Dell's service and system reliability in a class by itself.

Gateway 2000 G6-233

3 GATEWAY 2000 G6-233

PRO: Fast, excellent documentation, nice design

CON: Drive bays can be tough to access

At $2839, Gateway 2000's G6-233 is a terrific performance-minded value. With a PC WorldBench score of 251, the fleet-footed Pentium II-233 minitower rivals some PII-266 systems in performance, and it comes well appointed with 64MB of EDO DRAM and 512K of secondary cache. This powerful multimedia system is a good choice for both home and business use.

Our test unit came with a 16-bit Ensoniq Audio PCI Wavetable sound card, Altec Lansing speakers with a subwoofer, and an

		EXPANDABILITY						CUSTOMER SUPPORT			
Modem speed (kbps)	Sound board	Case style	Max. RAM (MB)	Maximum secondary cache (K)	Open RAM sockets	Open drive bays (ext./int.)	Open slots	Warranty for parts/labor (years)	Weekday toll-free support (hours)	Weekend support	Online support
56 [1]	Integrated Yamaha OPL3-Sax	minitower	128	512	2	2/1	4	3/1	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
56 [1]	integrated	minitower	64	512	1	2/2	4	3/1	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
56 [1]	Ensoniq Audio PCI Wavetable	minitower	256	512	2	3/2	4	3/3	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
33.6	integrated	desktop	512	512	3	1/0	3	3/1	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
56 [1]	Ensoniq Audio PCI Wavetable	minitower	256	512	1	3/2	0	3/3	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
33.6	integrated Yamaha OPL3-Sax	tower	128	512	2	3/3	4	3/1	24	Sat., Sun.	BBS, WWW
33.6	Creative Labs Vibra 16s	desktop	512	512	3	1/1	3	3/1	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
33.6	Creative Labs CT 3600 (OEM)	minitower	384	512	4	1/1	4	3/3	9	–	WWW
33.6	Sound Blaster AWE32 PnP	minitower	768	512	4	3/2	4	varies [2]/1	24 [3]	Sat., Sun.	–
33.6	Ensoniq Soundscape Vivo PnP	minitower	128	256	0	3/3	4	3/1	24	Sat., Sun.	BBS, WWW
–	Sound Blaster AWE32 PnP	tower	1024	512	3	2/0	5	3/3	9	–	BBS, WWW
56 [1]	Sound Blaster AWE64	tower	256	512	2	3/2	3	2/2	9	–	BBS, WWW
56 [1]	Ensoniq Audio PCI	tower	256	512	2	2/1	1	3/3	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
33.6	Sound Blaster AWE64 CT43B0	minitower	1024	512	6	3/1	4	1/1	9	Sat.	WWW
33.6	Sound Blaster AWE64	minitower	256	512	5	3/0	4	3/3	8	–	WWW
33.6	integrated	minitower	128	512	2	1/1	4	3/1	10	–	BBS, WWW
33.6	Sound Blaster AWE64	minitower	128	512	2	2/0	4	3/3	12	Sat.	WWW
–	Sound Blaster PnP	minitower	192	256	4	2/1	4	3/3	11 [4]	–	AOL, BBS, CIS, WWW
33.6	Sound Blaster 32 PnP	minitower	128	512	4	3/0	4	3/1	9	–	BBS, WWW
–	–	desktop	512	256	3	0/1	3	3/1	24	Sat., Sun.	AOL, BBS, CIS, WWW

STB Virge 4MB 3D PCI graphics card. The 3.2MB Ultra-DMA hard drive spins at twice the top data transfer rate of standard EIDE drives, while a 56-kbps x2 modem provides fast data communications.

Our unit had plenty of expansion room. Large thumbscrews make getting inside the case very easy, and we liked the color-coded I/O ports. Drawbacks are minor: We had to undo thumbscrews on the case's right side panel to remove the drive cages, and the hard disk occupies the most accessible of the internal bays.

Gateway 2000's documentation is thorough and clear. Our readers rank the company's system reliability as only fair, but support gets top scores: You get a three-year warranty on parts and labor, plus round-the-clock toll-free tech support.

4 DELL OPTIPLEX GXI 5200M

PRO: Fast; above-average service, support, and system reliability

CON: Expensive, limited expandability

The $3112 OptiPlex GXi 5200M remains expensive when compared to most of the Pentium MMX-200 competition. But this corporate desktop has everything you need in a high-end business box—snappy performance, bountiful storage, built-in networking, and great support. The D1728D-LS monitor isn't Dell's top 17-inch model; but for an extra $100, you can move up to a 17HS Trinitron, which displays even sharper text and provides more on-screen controls.

Dell OptiPlex GXi 5200M

The GXi 5200M is particularly well designed. Expansion slots sit on a daughtercard above the motherboard; we found plugging cards into the slots as painless as it gets. Our only beefs: With just one available external drive bay, one free 32-bit slot, and two 16-bit slots, the expansion options are a bit tight. In addition, the 8X CD-ROM drive is slower than most.

As with all systems in the OptiPlex line, Dell's support for the GXi 5200M is great. You get a three-year warranty on parts and one year on labor, and Dell continues to run up top marks for service quality and system reliability in our monthly reader fax-back surveys. ▶

5 GATEWAY 2000 G5-233

PRO: Loaded, affordable, good support

CON: Poor display, some wires left unconnected, system reliability rated only fair

Gateway 2000's G5-233 sports a stylish chassis and a $170 price cut. This Pentium MMX-233 minitower posted a PC WorldBench score of 240, yet costs just $2508 for a loaded multimedia configuration. The G5-233 comes outfitted with a fast 16X CD-ROM drive, as well as an Ensoniq Audio PCI Wavetable sound card, speakers, and Microsoft Office 97 Small Business Edition. While the 56-kbps Gateway 2000 Telepath x2 modem provides the potential for swift downloads, be aware that your Internet service provider must use the matching 3Com/U.S. Robotics protocol for this modem to have any advantage over 33.6-kbps units.

Gateway 2000 G5-233

The 17-inch CrystalScan 700 display provides a generous 16-inch viewable area, but our test PC's monitor suffered from a less-than-sharp picture that bowed outward at the top and bottom. Gateway also includes a speedy 4MB STB Virge graphics card with 3D acceleration for exciting game play. ▶

TOP 20 POWER DESKTOPS — TEST REPORT

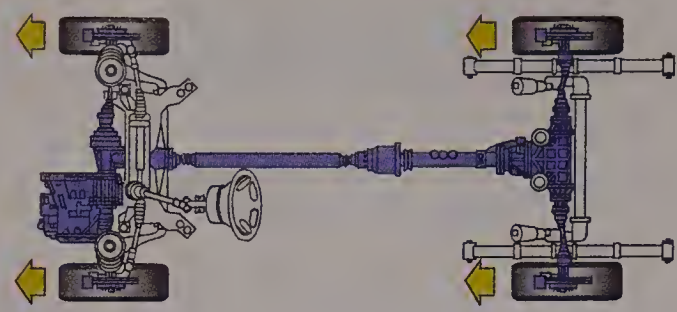
	SYSTEMS	CPU	RAM (MB)	Secondary cache (K)	PC WorldBench score
1	Dell Dimension XPS H266*	Pentium II-266	32	512	263
2	Dell Dimension XPS M233s*	Pentium MMX-233	32	512	243
3	Gateway 2000 G6-233*	Pentium II-233	64	512	251
4	Dell OptiPlex GXi 5200M*	Pentium MMX-200	32	512	226
5	Gateway 2000 G5-233*	Pentium MMX-233	32	512	240
6	Quantex QP6/233 SM-3	Pentium II-233	32	512	247
7	Dell OptiPlex GXpro 200	Pentium Pro-200	32	512	230
8	NMC Expert Pro II	Pentium II-266	64	512	260
9	Sys Technology Performance Pro 266A	Pentium II-266	32	512	264
10	Quantex QP6/200 SM-4	Pentium Pro-200	32	256	230
11	Premio FX2 Shadowhawk 266	Pentium II-266	64	512	257
12	DTK Quin-55M/PM233	Pentium MMX-233	32	512	238
13	Gateway 2000 G6-266XL	Pentium II-266	64	512	263
14	Digitron PS4000	Pentium II-266	32	512	259
15	Nova K6-200TX	AMD K6-PR200	64	512	238
16	Acma EXP 200	Pentium MMX-200	32	512	233
17	CLR Infinity PT5-A 200MMX	Pentium MMX-200	32	512	229
18	HP Vectra VA 6/200 MT	Pentium Pro-200	32	256	229
19	Total Peripherals Archer 2000A	Pentium MMX-200	32	512	237
20	IBM PC 365	Pentium Pro-200	32	256	232

*Best Buy

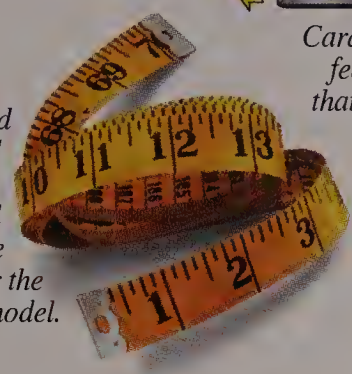
Word 7.0 for Windows 95 · Excel 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

HOW WE TEST All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

Gloves, maps and such can go in Caravan's tilt-out glove box. And some models have handy front door pockets for additional storage.

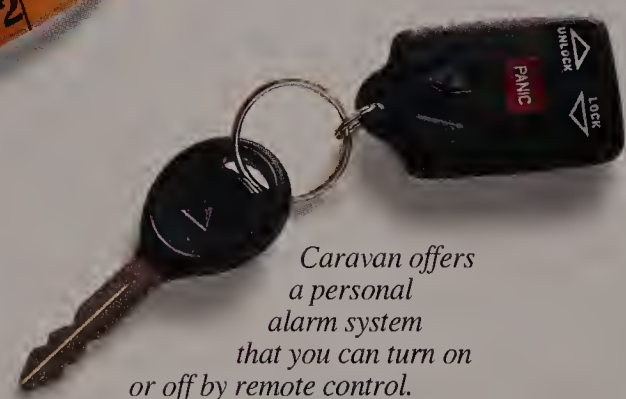


Caravan's available all-wheel-drive system features an inter-axle viscous coupling that automatically gives more torque to the rear wheels as needed.



When we redesigned Caravan we rounded the corners for a more aerodynamic shape, and still found a way to get 32 more cubic feet of room over the previous model.

Features you're sure to appreciate ...

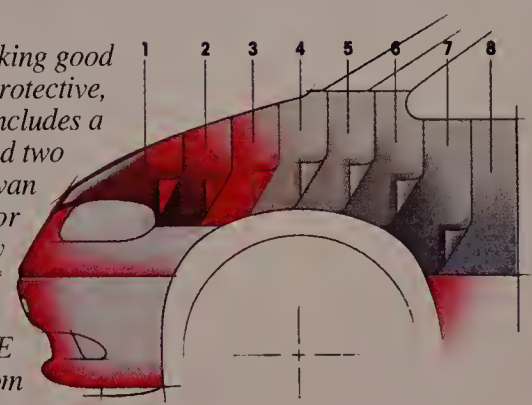


Caravan offers a personal alarm system that you can turn on or off by remote control.

aravan not only offers a convenient driver's side sliding door, it's cleverly designed to hold both sliding doors open ... even when you're parked on the steepest of hills.

... if you're so inclined.

*To keep Caravan looking good at any angle, we use a highly protective, eight-step finishing process that includes a full-body powdered anti-chip primer coat and two separate clear coat applications. Dodge Caravan is backed by our Customer One Care™ 3-year or 36,000-mile bumper-to-bumper warranty and 3/36 Roadside Assistance.**



With 12 convenient storage bins, grabbing a tissue is not an issue.

For still more information, call 1-800-4-A-DODGE or visit our Web site at www.4adodge.com

**See limited warranty & restrictions at your dealer. Excludes normal maintenance & wear items.*

Always use seat belts. Remember a backseat is the safest place for children.

Caravan The New Dodge

The G5-233 is nicely constructed, and the case shows little flex—though we were surprised to find that wires going from the sound card to the modem and CD-ROM drive had been left unconnected. Gateway includes a comfortable keyboard and Microsoft's Intellipoint mouse, which has a small wheel between its buttons to let you scroll documents and Web pages with one finger.

Gateway's service and support are top-flight. Besides the three-year limited warranty on parts and labor, you get round-the-clock phone support and a year of free on-site service. In our fax-back surveys, Gateway scores a less impressive fair rating for system reliability.

New This Month

The following PCs made our Power Desktops chart for the first time this month. For brief reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

9 SYS TECHNOLOGY PERFORMANCE PRO 266A

PRO: Breakneck speed, colossal hard drive, good speakers, tidy interior

CON: No bundled apps, subpar support policies, thin documentation

Sys Technology consistently builds some of the fastest systems we've reviewed, and the new Performance Pro 266A is no exception. This well-appointed Pentium II-266 minitower set a new PC WorldBench performance record, with a score of 264 (a distinction it shares with the Unicent Avanta 266 XLS, which failed to make the cut on our Power Desktops chart this month). Still, for $3249, buyers might expect a little more polish and at least a few applications.

Performance Pro 266A

The new *PC World* speed champ comes with the kind of hardware you'd expect from a powerhouse PC. It features a big 6.4GB hard disk—an Ultra-DMA/ATA IDE drive that transfers data to and from devices quickly, which can be especially useful for running demanding multimedia applications. The Performance Pro's savvy multimedia setup includes a fast 16X CD-ROM drive, Creative Labs' Sound Blaster AWE32 audio board, and a pair of MLi 818 speakers that produce crisp, robust sound. The communications features aren't bad, either: a Cardinal 33.6-kbps modem and FaxTalk Plus software. The Number Nine Revolution 3D graphics board with 8MB of WRAM drives bright, color-rich images to the system's 17-inch Sys Technology monitor.

Overall, the Performance Pro 266A is nicely designed. We found the Windows 95 keyboard comfortable to use, if a bit on the flimsy side. We also noticed that the case has *two* power switches—one on the front for standard on/off operation, and another in the rear that must be set to "on" for the front switch to function—a potentially confusing setup. The case itself is somewhat difficult to remove, but once it was off we found a very tidy interior. The motherboard allows easy access to the four free SIMM sockets, three ISA slots, one PCI slot, and five drive bays.

Unfortunately, the Performance Pro lacks a software bundle—you'll need to supply your own office suite and other applications. The included documentation could be better, too. The Performance Pro comes with a mess of booklets—one for each component—as well as a generic user manual for Windows 95.

We have very little information on the quality of Sys Technology's support or the overall reliability of its products. When we tried calling the company's support line, we had trouble getting through to a technician; and once we did, we felt rushed off the phone. The Performance Pro 266A's warranty isn't the best in town, either: Labor and on-site service are free for one year only, and the parts warranty varies by component—six years for the CPU and main RAM, and one to five years for other components. You get round-the-clock, toll-free technical support for the first year, but thereafter it's abruptly reduced to 9 hours per weekday, on your dime.

11 PREMIO FX2 SHADOWHAWK 266

PRO: Very fast, comes with 64MB of RAM, outputs video to a TV or VCR

CON: No modem, poor documentation, slow CD-ROM drive, no software

Premio's top-of-the-line FX2 Shadowhawk 266 costs just $2779, yet racked up an impressive PC WorldBench score of 257. Just be prepared to fill in a few gaps: This fast Pentium II-266 PC lacks basics like a modem or a software bundle.

Premio FX2 Shadowhawk 266

The Shadowhawk comes with a generous 64MB of RAM, but the 3.2GB hard disk is somewhat smaller than average for high-end desktops. The ATI 3D Pro Turbo PC2TV video card includes a port that feeds video directly to your TV or VCR for playback or recording. The 17-inch Sceptre monitor puts the power switch on the side instead of in front, so you won't mistake it for a screen control. The Sound Blaster AWE32 card provides terrific wavetable MIDI sound and is compatible with DOS games, but the MLi 691H speakers could use more bass.

You'll need to pay extra for a modem to connect to the Internet, and the slow 8X CD-ROM drive failed to impress us. What's more, we were unable to play an audio CD because the PC lacked an internal audio cable to connect the CD-ROM drive to the sound card.

Home-office users will be disappointed with the software bundle: There is none. And while the charcoal-gray tower chassis looks nice enough, Premio loses style points for mating it with a putty-beige monitor. The case is tough to remove, but the interior is clutter-free, allowing easy access to the PC's three open DIMM sockets, two free PCI slots, two ISA card slots, and one shared space for a PCI or ISA card. Drive bays are a bit of a squeeze, though, with only two extra bays available (one 3.5-inch and one 5.25-inch). Also, the keyboard feels flimsy, making it slightly uncomfortable to use.

Premio lets component makers supply the documentation—a problem for those looking for a neat, integrated manual. We lack enough responses from our ▶

What does he know about his hard drive? It's where all his ideas live. Or die.

Can a hard drive be expressions? Thoughts? Theories? Naturally. Your life's on it. Day in and day out, your hard drive's at work without you even noticing it. And when you want anything from it, it works with a quiet little beep.

Of course, there are hard drives and then there are hard drives. So why keep your life on anything but the most reliable one? A Western Digital drive.

Western Digital makes the world's most recommended hard drives. We offer a whole line of high-quality Enhanced IDE and SCSI drives. Drives for your personal life. Drives for your business. Drives for every aspect of your life.

You know what you have to lose. So visit the Western Digital website at www.wdc.com/life or call 1-888-4WD-DRIVE (493-3748), extension 112.

©1996 Western Digital Corporation.

Western Digital

PUT YOUR LIFE ON IT.

Circle 251 on reader service card

monthly fax-back survey to rate Premio's service, but our calls to tech support turned up only fair results. We reached representatives within minutes but got less-than-perfect answers to our questions. Support hours are short—9 hours per weekday. Though Premio's three-year parts and labor warranty is good, on-site service costs an extra $50 for the first year.

13 GATEWAY 2000 G6-266XL

PRO: Ultrafast, crammed with features, big display and hard drive, excellent support

CON: Very expensive, bulky, only one free slot, reliability record is only fair

Gateway 2000 didn't waste any time in equipping its PCs with DVD-ROM drives, the latest in hot consumer-electronics technologies. The company's top-of-the-line G6-266XL is one of the first DVD-equipped systems to appear in our Top 20 reviews. But at $5128, this hulking tower is no particular bargain.

Gateway 2000 G6-266XL

Setting aside the gee-whiz factor, our tests show that the G6-266XL's DVD setup isn't quite ready for prime time: The two movies we played on it (*Twister* and *Batman*) had great full-screen resolution, but we also noticed that there was too much jitter and that patches were jaggy and pixelated. Gateway 2000 attributes these problems to driver software, and video quality may improve markedly by the time you read this. Still, there isn't much in the way of DVD software available right now—Gateway's bundle includes only the two movies we played in our tests, plus a coupon for another DVD film (a $25 value). Our conclusion: Systems with DVD don't yet hold a huge advantage over PCs equipped with standard CD-ROM drives. Of course, the G6-266XL's steep price doesn't help, either.

To be sure, the G6-266XL has a dreamy power configuration by almost anyone's standard. It's one of the fastest PCs you can buy, outpaced only by Sys Technology's ninth-place Performance Pro 266A and the Unicent Avanta 266 XLS, which didn't make the chart.

Graphic artists will love the G6-266XL's big, crisp 21-inch Trinitron monitor and the potent performance combination of a 266-MHz Pentium II processor, 64MB of RAM, and a 4MB STB Virge Gx graphics card. The capacious 9GB SCSI hard disk is among the largest we've ever seen. The G6-266XL also includes a 56-kbps x2-compatible modem with voice and fax mailbox software, as well as Microsoft Office Small Business Edition. Its high-capacity tape backup drive uses 4GB Travan cartridges and is a welcome, if rare, feature in the Top 20. Rounding out this system's features is an excellent speaker/subwoofer setup: The MicroMedia speakers from Boston Acoustics are among the best we've heard—and certainly the best for their compact size.

Unfortunately, the incredibly pricey G6-266XL will remain just a dream for most PC shoppers. It may also be too big for many offices, with its 2-foot-tall tower case and a 21-inch monitor that's a good 3 to 4 inches larger on all sides than a 17-inch model. Surprisingly, expansion is limited: Extras like the SCSI adapter and dedicated DVD media processor board leave only a single 16-bit ISA slot free, and no open PCI slots. Just three bays are available for drive upgrades.

Gateway provides ample support for the G6-266XL. Documentation is extensive and easy to read, and support policies are excellent, including a three-year warranty on parts and labor and round-the-clock toll-free tech support. While Gateway's system reliability is still garnering only a fair rating from our readers these days, the company's support record nevertheless draws high praise.

We'll be keeping a close eye on the G6-266XL and other DVD-equipped PCs. For now, you'd likely use its Toshiba DVD-ROM drive only for playing CD-ROMs (it runs at 9X), but Gateway says it's working to improve the drivers to smooth out the video. The improvements will be welcome, since the G6-266XL's roomy monitor is actually larger than many TV screens and can display the DVD images at a higher resolution.

14 DIGITRON PS4000

PRO: Great performance, nice monitor

CON: Expensive, only a one-year warranty

Newcomer Digitron breaks into the Top 20 with the PS4000, a feature-laden Pentium II-266 minitower that scored 259 in our PC WorldBench test suite. While it's no bargain at $3999, its features make it suitable for use as a network or Web server.

The PS4000 comes with an integrated Ultra-Wide SCSI connection and a RAID-Bus slot to add a low-cost RAID card for drive mirroring. A fast 4.3GB Seagate ST34501W Cheetah Ultra-Wide SCSI hard drive rotates at a blistering 10,000 rpm. Expandability is good, with four free drive bays and four open card slots. Digitron includes a Cirque keyboard with a front-right–mounted touchpad—good for working in cramped spaces.

The 17-inch MAG InnoVision DX700T display has a crisp, undistorted picture and a large 16.1-inch viewable area. The STB Velocity 3D Video card with 4MB of VRAM handles resolutions up to 1024 by 768 at 24-bit color. The PC even *sounds* good, with a terrific Sound Blaster AWE64 card and Nakamichi SP-D3 speakers with subwoofer. The PS4000's 16X CD-ROM drive is standard for power desktops these days. The software bundle includes Lotus SmartSuite 97 and Compton's Interactive Encyclopedia.

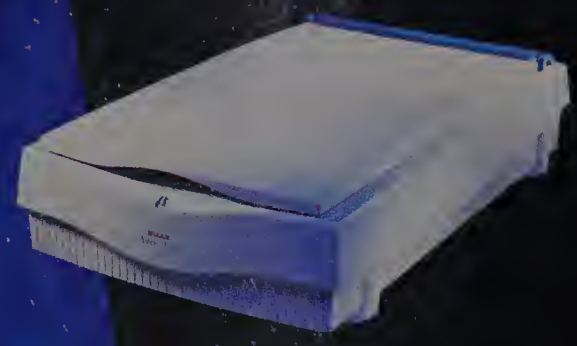
Digitron PS4000

Digitron's documentation is well written, but the support policies are spartan. There's only one year of coverage on parts and labor. Technical phone support is available just 9 hours each weekday, as well as limited hours on Saturday. We have no fax-back survey data on Digitron's service and reliability record. ▶

Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Power Desktops chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- **Unicent Avanta 266 XLS**
- **Seanix CS DVD 200**
- **Digital Celebris GL-2 6266**
- **IBM PC 300 GL**
- **Packard Bell Platinum 2250x**



The most advanced technology is used to outperform the HP ScanJet 4c:

- Faster scanning speed; full-color page in 74 seconds
- Bit Enhancement Technology (B.E.T.) that allows the scanner to capture more accurate colors and tones and provide smoother gradations
- Scans up to legal size
- Enclosed optical system for dust-free scanning; cold cathode lamp lasts ten times longer than a fluorescent lamp
- Bundled with Adobe® PhotoDeluxe™ or Adobe Photoshop® 4.0 image editing software and Presto!® PageManager® with OCR
- Advanced technology at an affordable price

PRODUCTIVITY. CREATIVITY. THE ASTRA 1200S SCANNER GIVES YOU BOTH.

The Astra 1200S does more than you ever thought a scanner could. It's the next generation of the award-winning S-12, and it uses Bit Enhancement Technology to provide crisp, clean images with amazing detail. The Astra 1200S not only helps you produce quality scans, but also send faxes and e-mail, OCR, make copies with UMAX Copy Utility, add text and images to your work, and create Web pages. There's no limit to how productive you can be with the Astra 1200S from UMAX.

Call us for more details at 1-800-331-8629, or visit us at www.umax.com

UMAX®

© 1997 UMAX Technologies, Inc. All rights reserved. UMAX is a registered trademark of UMAX Technologies, Inc. All other brands and product names are trademarks or registered trademarks of their respective companies.

Circle 250 on reader service card

My Dog Ate It

No Excuses

That's the whole idea behind our reliable new workgroup printers — the Fujitsu PrintPartner® 10V and PrintPartner 14AV.

Two exceptional printers designed to set new standards for price, performance and reliability.

Here's where the No Excuses℠ part comes in. Fujitsu backs each printer with an industry leading one-year warranty, so in the unlikely event of a breakdown, your printer will be replaced within two business days.

No Excuses.

And as you might expect, coming from Fujitsu — the world's second largest computer company — these new workgroup printers have the speed and performance you want. And the price? Let's just say there's no excuse to own anything else.

For the PrintPartner dealer nearest you, call 1-888-561-2035 today.

PrintPartner 14AV*

PrintPartner 10V

FUJITSU

Download your free No Excuses Screensaver at www.fcpa.com.

*©1997, Fujitsu Computer Products of America, Inc. All rights reserved. No Excuses is a service mark of Fujitsu Computer Products of America, Inc. All other trademarks are the property of their respective companies. *Shown with optional second 500-sheet paper tray.*

Circle 100 on reader service card

PC WORLD

TOP 20 BUDGET DESKTOPS

	SYSTEMS	Last month	Month tested	Street price (7/16/97)	CPU	Comments
1	Dell Dimension M200a 800/388-8542 www.dell.com	2	June 97	$1829	Pentium MMX-200	$270 off quick, well-rounded PC with top reliability and service rating.
2	Quantex QP5/200 SM1 MMX 800/896-4898 www.quantex.com	–	NEW	$1849	Pentium MMX-200	Very fast PC for under $2000; reliability rating needs improvement.
3	Gateway 2000 G5-166 M 800/846-2000 www.gateway.com	5	Aug 97	$1899	Pentium MMX-166	$35 price slide on multimedia PC; 17-inch monitor isn't Gateway's best.
4	Quantex QP6/200 PD-4 800/896-4898 www.quantex.com	13	Feb 97	$2399	Pentium Pro-200	Very fast, loads of software, improved service score; $60 less but still pricey.
5	Polywell Poly 500QX 800/999-1278 www.polywell.com	11	June 97	$1295	AMD K5-PR166	Bargain PC features full multimedia, good warranty; $100 less.
6	Micro Express MicroFlex-K5/5166 800/989-9900 www.microexpress.net	6	Aug 97	$1299	AMD K5-PR166	Low-cost generic PC is $50 cheaper, one of the fastest for under $1500.
7	CyberMax Power Max 800/437-4596 www.cybmax.com	9	Sep 97	$1599	AMD K6-PR166	Fast, low-cost AMD K6 tower drops $50; support available around the clock.
8	USA Flex Performer 800/872-3539 www.usaflex.com	–	NEW	$1999	Cx6x86MX-PR200	Cyrix-based PC is one of the fastest on chart; reliability unknown.
9	Micro Express MicroFlex-PR/233 800/989-9900 www.microexpress.net	12	Sep 97	$1849	AMD K6-PR233	233-MHz system is fastest K6 by far; good design but no software.
10	Kingdom Pentium MMX 200 Home & Office 800/385-3436 www.kingdomcomputers.com	20	July 97	$1997	Pentium MMX-200	$300 price slash moves this loaded multimedia minitower up the chart.
11	ProGen Atlas X 200 800/776-9595 www.progen.com	15	Aug 97	$1729	Pentium MMX-200	Fleet-footed, $70 off, speakers with subwoofer; no weekend support.
12	Micro Express MicroFlex-P5/MMX 800/989-9900 www.microexpress.net	–	Sep 97	$1699	Pentium MMX-200	Fast, well-designed PMMX-200 drops $200; display is a little fuzzy.
13	Kingdom 6x86 P166+ Super Value 800/385-3436 www.kingdomcomputers.com	16	May 97	$1197	Cx6x86-P166+	$50 price shave, decent performance, great price; no modem.
14	CyberMax Intel Promax 3 P200 MMX 800/437-4596 www.cybmax.com	–	June 97	$1749	Pentium MMX-200	$350 price cut puts fast, well-outfitted multimedia machine on the chart.
15	Micro Express MicroFlex-686/P200+LC 800/989-9900 www.microexpress.net	18	Aug 97	$1799	Cx6x86-P200+	Quick and affordable, with multimedia, 4GB hard disk, good sound card.
16	Nexar MMX P-200 888/639-2772 www.nexarpc.com	–	July 97	$1659	Pentium MMX-200	$240 drop puts easily upgradable PC on chart; meager support policies.
17	Micro Express MicroFlex-PCI/5200 800/989-9900 www.microexpress.net	–	Feb 97	$1799	Pentium-200	Good performance for the money, especially if you don't need MMX.
18	Polywell Poly 5200Mx 800/999-1278 www.polywell.com	–	May 97	$1785	Pentium MMX-200	Fast PC hits the chart with $265 drop; limited data on system reliability.
19	Royal Computer Synergy Best Buy 800/486-0008 www.royalcomp.com	–	Sep 97	$1799	Pentium MMX-200	Speedy, low-cost minitower with good features but thin support policies.
20	ProGen Discover MPEG P166 888/776-9595 www.progen.com	–	Mar 97	$1149	Pentium-166	Least expensive PC on the chart; performance is decent.

Best Buy See features chart, page 258; performance chart, page 260. Recommended as home system

[1] Insufficient data.

THE QUANTEX QP5/200 SM1 MMX soars to a number two Best Buy, combining excellent features, good support, and a strong PC WorldBench score of 230 in an attractively priced $1849 package. Budget buyers should prepare themselves for a Pentium II invasion in coming months. The QP5/200 SM1 MMX's sibling, the Quantex QP6/266 WS-3x, nearly made the budget chart by combining a PC WorldBench score of 255 (performance that's comparable to a Pentium II-266 PC's) with a reasonable $2499 price. A Quantex Pentium II-233 system now on the Power Desktops chart—the QP6/233 SM-3 reviewed in September—is also poised to break into the budget ranks.

SCORECARD

★ Overall rating	Price	Vendor's system reliability	Features and design	PC WorldBench score/performance	Vendor's support quality/policies	Reader service number
88	average	best	very good	219/very good	best/best	687
84	average	fair	very good	230/very good	best/best	688
82	average	fair	very good	213/very good	best/best	689
81	expensive	fair	outstanding	235/outstanding	best/best	690
81	inexpensive	[1]	good	213/very good	[1]/good	691
81	inexpensive	[1]	very good	208/good	[1]/best	692
81	average	[1]	very good	223/very good	[1]/best	693
79	average	[1]	outstanding	235/outstanding	[1]/best	694
79	average	[1]	very good	246/outstanding	[1]/best	695
79	average	[1]	outstanding	233/outstanding	[1]/good	696
78	average	[1]	very good	232/outstanding	[1]/fair	697
78	average	[1]	good	232/outstanding	[1]/best	698
78	very inexpensive	[1]	good	197/good	[1]/good	699
78	average	[1]	very good	229/very good	[1]/best	700
77	average	[1]	very good	217/very good	[1]/best	701
77	average	[1]	very good	228/very good	[1]/poor	702
77	average	[1]	very good	219/very good	[1]/best	703
76	average	[1]	good	234/outstanding	[1]/good	704
76	average	[1]	very good	226/very good	[1]/poor	705
76	very inexpensive	[1]	good	196/good	[1]/fair	706
Scorecard weightings ▶	Price 25 percent	Reliability 25 percent	Features 20 percent	Performance 15 percent	Support 15 percent	All products: 907

This Month's Best Buys

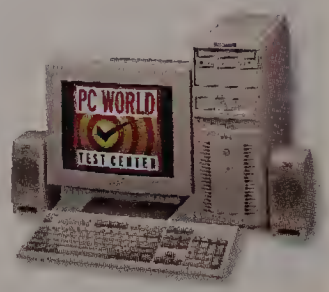
1 DELL DIMENSION M200A

PRO: Inexpensive for a PMMX-200, excellent support, modem uggraded to 56 kbps

CON: Monitor a little dull

The Dell Dimension M200a takes over the top spot now that Dell has discontinued its Dimension XPS M166s, the only machine that scored ahead of it since the M200a arrived in June. With a PC WorldBench score of 219, this MMX-200 minitower is only slightly faster than the average PMMX-166, but its affordable $1829 price (down $270 from last month) makes it a terrific value.

The M200a now features two upgrades: a faster 12X/24X variable-speed CD-ROM drive and a 3Com/U.S. Robotics x2 56-kbps modem that has become standard issue on all Dimension desktops. With its Microsoft Office Small Business Edition software bundle, the M200a is a good no-nonsense choice for the home or small office. However, we found that the 15-inch LS monitor included with our test unit lacked sharpness (upgrading to the basic 17-inch Dell display costs an extra $175).



Dell Dimension M200a

The Dimension M200a's clean interior makes the system easy to upgrade. Dell's documentation is complete with illustrations, index, and glossary; we just wish it were integrated into one book. Of course, the company's support and system reliability ratings are superb—tops among all vendors, according to *PC World*'s readers.

2 QUANTEX QP5/200 SM1 MMX

PRO: Fast, affordable

CON: No speakers, reliability rated just fair

Quantex's QP5/200 SM1 MMX delivers better-than-average Pentium MMX-200 performance to the Budget Desktops chart, scoring a commendable 230 on our PC WorldBench test suite. At just $1849, this multimedia minitower costs about $300 less than the average for its processor class.

The QP5/200 comes with the impressive Matrox Mystique video adapter—a fixture on our Top 10 Graphics Boards charts—loaded with 4MB of fast SGRAM. You also get Matrox's Rainbow Runner video capture and TV tuner module. The 15-inch MAG InnoVision monitor provides good viewing. Audio is handled by a 16-bit Ensoniq sound card, but Quantex doesn't throw in speakers. A speedy 16X CD-ROM drive keeps pace with the latest applications and games.

As with other Quantex systems we've seen, the QP5/200's case is sturdy and the interior designed for expandability. Despite a few twisting cables haphazardly bundled in our test unit's chassis, the five open drive bays (three external and two internal) were easy to reach. You'll have to lift up the cables to snap in additional ▶

TOP 20 BUDGET DESKTOPS — STANDARD FEATURES

	SYSTEMS	CPU	RAM (MB)	Secondary cache (K)	Hard drive (GB)	Graphics adapter	Video RAM (MB/type)	Monitor tube/ viewable diagonal (inches)	Screen pitch (mm)	CD-ROM drive speed
1	Dell Dimension M200a*	Pentium MMX-200	16	512	2.1	integrated	2/DRAM	15/13.8	.28	24X
2	Quantex QP5/200 SM1 MMX*	Pentium MMX-200	32	512	3.2	Matrox Mystique 220	4/SGRAM	15/13.9	.28	16X
3	Gateway 2000 G5-166 M*	Pentium MMX-166	16	512	1.3	integrated	2/EDO DRAM	17/16.1	.28	16X
4	Quantex QP6/200 PD-4*	Pentium Pro-200	32	256	3.2	Matrox Millennium	2/WRAM	17/16	.28	12X
5	Polywell Poly 5000X*	AMD K5-PR166	32	512	2.5	Diamond Stealth 3D 2000	2/EDO DRAM	15/13.8	.28	12X
6	Micro Express MicroFlex-K5/5166	AMD K5-PR166	32	512	2.1	ATI PC2TV	2/WRAM	15/13.8	.28	10X
7	CyberMax Power Max	AMD K6-PR166	32	512	3.2	Matrox Mystique 220	4/SGRAM	15/13.8	.28	16X
8	USA Flex Performer	Cx6x86MX-PR200	32	512	4.1	Matrox Millennium	4/WRAM	17/16.1	.28	16X
9	Micro Express MicroFlex-PR/233	AMD K6-PR233	64	512	2	STB Velocity 3D Video	4/VRAM	17/15.8	.26	12X
10	Kingdom Pentium MMX 200 Home & Office	Pentium MMX-200	32	512	3.2	Hercules Dynamite 128	4/MDRAM	17/15.8	.28	16X
11	ProGen Atlas X 200	Pentium MMX-200	32	512	3.2	Matrox Millennium	4/WRAM	17/15.8	.26	16X
12	Micro Express MicroFlex-P5/MMX	Pentium MMX-200	32	256	2	STB Velocity 3D Video	4/VRAM	17/15.6	.28	12X
13	Kingdom 6x86 P166+ Super Value	Cx6x86-P166+	16	256	2.1	PCI-60V	2/EDO DRAM	15/13.8	.28	16X
14	CyberMax Intel Promax 3 P200 MMX	Pentium MMX-200	32	512	3.2	Diamond Stealth 3D 2000	4/EDO DRAM	17/15.8	.28	12X
15	Micro Express MicroFlex-686/P200+LC	Cx6x86-P200+	32	512	4	STB Velocity 3D Video	4/VRAM	17/15.8	.28	12X
16	Nexar MMX P-200	Pentium MMX-200	32	512	2.5	Diamond Stealth 3D 2000	2/EDO DRAM	15/13.8	.28	12X
17	Micro Express MicroFlex-PCI/5200	Pentium-200	32	512	2.1	STB Lightspeed 128	2/MDRAM	17/16	.28	10X
18	Polywell Poly 5200Mx	Pentium MMX-200	32	512	2.1	Diamond Stealth 3D 2000	4/EDO DRAM	17/15.8	.28	8X
19	Royal Computer Synergy Best Buy	Pentium MMX-200	32	512	2.5	ATI All-in-Wonder	4/DRAM	17/16	.26	12X
20	ProGen Discover MPEG P166	Pentium-166	16	512	1.6	Matrox Millennium	2/WRAM	15/14	.27	12X

* Best Buy [1] Downloads only, uploads at 33.6 kbps; uses 3Com/U.S. Robotics' x2 technology. [2] Downloads only, uploads at 33.6 kbps; uses Rockwell/Lucent's K56flex technology.

RAM on the bottom DIMM socket, but empty adapter slots sit in the clear.

Software includes Microsoft Office 97 Small Business Edition and a selection of Windows 95 games, including Demolition Derby, a car-racing game on CD-ROM. The QP5/200's 56-kbps fax-modem, which uses the K56flex standard from Rockwell/Lucent, offers the potential for swift Internet downloads.

Quantex QP5/200 SM1 MMX

Quantex produced an adequate manual with serviceable illustrations, but following its jargon can get pretty difficult. Fortunately, the company's tech support staff is accessible through a toll-free number around the clock. Our anonymous calls got responses within 5 minutes and revealed a friendly and patient staff. In our fax-back surveys, readers also give Quantex high scores for support, though they rate system reliability as only fair. The QP5/200 SM1 MMX comes with an industry-standard warranty that covers parts for three years and labor for one.

3 GATEWAY 2000 G5-166 M

PRO: Excellent internal design, 17-inch display, good software bundle

CON: System reliability rated only fair

Gateway 2000's G5-166 M moves up to third place from fifth last month. While the G5-166 M is no speed demon—its PC WorldBench score of 213 puts it among the slower PCs on the chart—Gateway outfits this minitower with everything you need for communications and multimedia. The result: A PC that's ready for home or office.

What's more, the well-designed G5-166 M is getting more affordable. It now costs just $1899, despite a loaded configuration that includes a CrystalScan 17-inch monitor, 2MB of integrated video, a 16-bit sound card, and a 16X CD-ROM drive. The Telepath 56-kbps modem conforms to the 3Com/U.S. Robotics x2 standard, and there is a set of Altec Lansing speakers. The 1.3GB hard drive could get cramped.

The G5-166 M benefits from Gateway's attractive yet sensible case design. With its softened edges, the PC avoids the utilitarian look of those cookie-cutter boxes, and the interior is easily accessible by twisting

		EXPANDABILITY						CUSTOMER SUPPORT			
Modem speed (kbps)	Sound board	Case style	Max. RAM (MB)	Maximum secondary cache (K)	Open RAM sockets	Open drive bays (ext./int.)	Open slots	Warranty for parts/labor (years)	Weekday toll-free support (hours)	Weekend support	Online support
56 [1]	Sound Blaster 16	minitower	64	512	1	3/1	6	3/1	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
56 [2]	Ensoniq Audio S5016	minitower	256	512	4	3/2	5	3/1	24	Sat., Sun.	BBS, WWW
56 [1]	integrated	minitower	128	512	1	3/2	5	3/3	24	Sat., Sun.	AOL, BBS, CIS, MSN, WWW
33.6	Ensoniq Soundscape Vivo 90	minitower	256	512	2	3/3	4	3/1	24	Sat., Sun.	BBS, WWW
33.6	Supersound Origins 3D CS32	minitower	128	512	4	3/0	4	3/5	12	Sat.	BBS, WWW
33.6	Superior Sound32	minitower	128	512	4	3/2	3	4/4	24	Sat., Sun.	WWW
33.6	Ensoniq Audio PCI Wavetable	tower	384	512	5	3/2	5	3/1	24	Sat., Sun.	BBS, WWW
56 [1]	Ensoniq Audio PCI 971B	minitower	256	512	4	3/1	3	3/3	24	Sat., Sun.	BBS, WWW
33.6	Ensoniq Audio PCI Wavetable	tower	256	512	1	3/0	3	4/4	24	Sat., Sun.	WWW
33.6	Schubert 3D	minitower	128	512	4	3/3	4	3/1	13	Sat.	WWW
33.6	Progen AWE 32 PnP 3D	minitower	256	512	4	3/1	4	3/1	9	–	BBS, WWW
33.6	Super Sound 32W-3D	minitower	256	512	5	3/1	3	4/4	24	Sat., Sun.	WWW
–	Schubert 3D	tower	128	512	3	3/3	5	3/1	13	Sat.	WWW
33.6	Ensoniq Soundscape Vivo 90	minitower	128	512	0	3/2	4	3/1	24	Sat., Sun.	BBS, WWW
33.6	Sound Blaster AWE64	minitower	512	512	2	2/3	3	4/4	24	Sat., Sun.	WWW
33.6	Televideo Telesound 3D	minitower	128	512	2	1/1	4	3/1	12	–	BBS, WWW
28.8	Opti 941	minitower	256	512	4	2/3	3	4/4	24	Sat., Sun.	WWW
33.6	Sound Blaster 16 IDE PnP	minitower	128	512	5	3/0	5	3/5	24	Sat., Sun.	BBS, WWW
33.6	ESS ES1B6BF PnP Audio Drive	minitower	128	512	3	3/0	3	1/1	10	Sat., Sun.	BBS, WWW
33.6	ESS/6B6BPnP	minitower	128	512	2	3/1	4	3/1	9	–	BBS, WWW

thumbscrews. Although the front panel's on/off switch and reset buttons are unlabeled, the I/O ports in back are color-coded.

If you need to upgrade or add a component to the G5-166 M, swapping ISA or PCI cards shouldn't be a problem: The interior is one of the cleanest we've seen, with everything well organized for easy access. The cables are neatly bundled, so you won't have to push them aside to add memory, and nothing obstructs the adapter slots. All of the drive bay screws and rails are placed so you can get at them without contortion, though the installed hard drive does take up the most accessible bay.

Gateway 2000 G5-166 M

One of Gateway 2000's strengths has always been its documentation, and the materials bundled with the G5-166 M are no exception. And the helpful, friendly on-screen "tour guide" kept us focused and moved us along to the information we needed. In addition, the company integrates its material very well with the vendor-supplied component manuals.

The software is another strong point—Gateway bundles both business and home-oriented applications. Encarta 97, Microsoft Office 97 Small Business Edition, and Street Plus (which helps you locate virtually any address in the United States) are all included. Gateway also throws in a few titles, like The Human Body 2.0, that take advantage of MMX.

Our readers rate Gateway 2000's system reliability as only fair, but hail its support as among the best.

4 QUANTEX QP6/200 PD-4

PRO: Fast performance, 17-inch monitor, improved support quality

CON: Expensive, no MMX support

The only Pentium Pro system on the Budget Desktops chart, the Quantex QP6/200 PD-4 jumps into Best Buy position thanks in part to the company's much-improved support record. At $2399, the QP6/200 PD-4 may not seem like a bargain—unless you're looking for top performance. This Pentium Pro-200 minitower racked up a terrific PC WorldBench score of 235, ▶

making it among the three fastest systems on the chart.

The PD-4 is a good computer for both home and office. You get a generous 3.2GB hard disk and a 17-inch MAG InnoVision monitor that delivers particularly crisp images in its 16 inches of viewing area. However, the Matrox Millennium graphics card comes with only 2MB of WRAM, which limits your choice of resolutions and color settings. A 12X CD-ROM drive and an Ensoniq Vivo 90 sound card complete the multimedia picture.

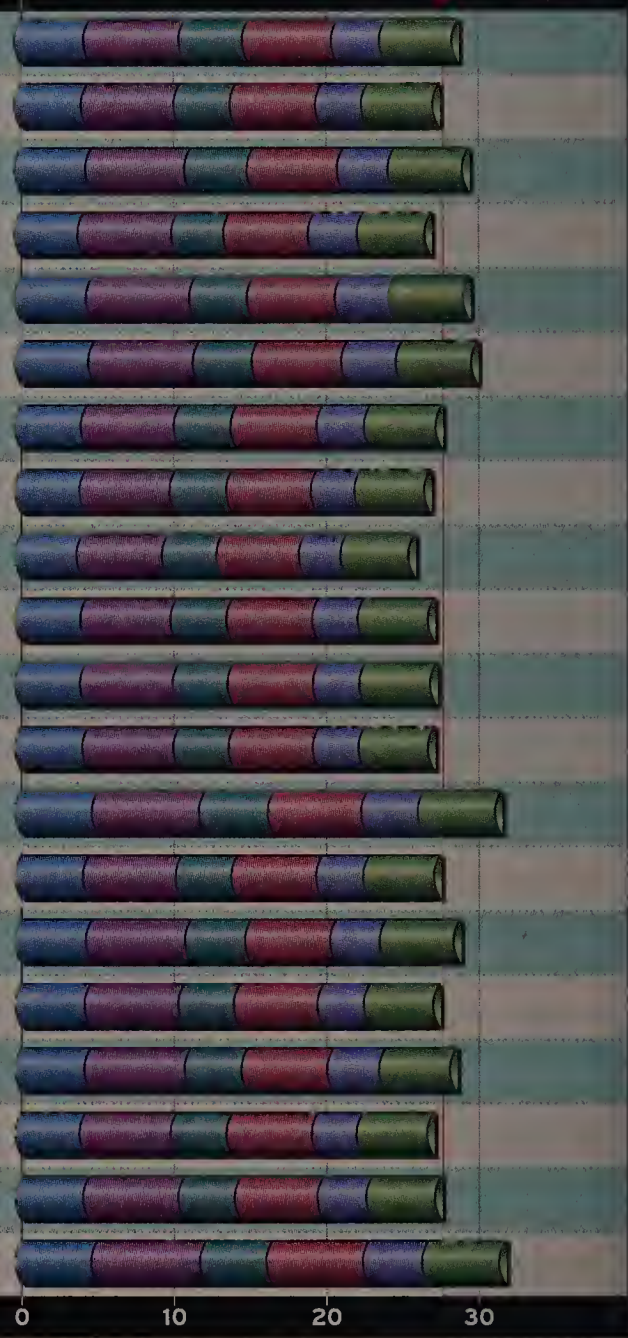
Quantex QP6/200 PD-4

The system's interior is uncluttered, with four free expansion slots and six open drive bays. Access to all memory and adapter slots is easy, and the ports along the back are clearly labeled and accessible. The software bundle will keep home users busy for a while: You get WordPerfect 7, Quicken, Compton's Interactive Encyclopedia 1996, and other titles.

The QP6/200 PD-4 will appeal to anyone using Windows NT, since the system's Pentium Pro CPU is heavily optimized to NT's 32-bit code. But because the processor lacks support for the MMX instruction set, some newer home-oriented titles may not run on this system. ▶

TOP 20 BUDGET DESKTOPS — TEST REPORT

	SYSTEMS	CPU	RAM (MB)	Secondary cache (K)	PC WorldBench score
1	Dell Dimension M200a*	Pentium MMX-200	16	512	219
2	Quantex QP5/200 SM1 MMX*	Pentium MMX-200	32	512	230
3	Gateway 2000 G5-166 M*	Pentium MMX-166	16	512	213
4	Quantex QP6/200 PD-4*	Pentium Pro-200	32	256	235
5	Polywell Poly 500QX*	AMD K5-PR166	32	512	213
6	Micro Express MicroFlex-K5/5166	AMD K5-PR166	32	512	208
7	CyberMax Power Max	AMD K6-PR166	32	512	223
8	USA Flex Performer	Cx6x86MX-PR200	32	512	235
9	Micro Express MicroFlex-PR/233	AMD K6-PR233	64	512	246
10	Kingdom Pentium MMX 200 Home & Office	Pentium MMX-200	32	512	233
11	ProGen Atlas X 200	Pentium MMX-200	32	512	232
12	Micro Express MicroFlex-P5/MMX	Pentium MMX-200	32	256	232
13	Kingdom 6x86 P166+ Super Value	Cx6x86-P166+	16	256	197
14	CyberMax Intel Promax 3 P200 MMX	Pentium MMX-200	32	512	229
15	Micro Express MicroFlex-686/P200+LC	Cx6xB6-P200+	32	512	217
16	Nexar MMX P-200	Pentium MMX-200	32	512	228
17	Micro Express MicroFlex-PCI/5200	Pentium-200	32	512	219
18	Polywell Poly 5200Mx	Pentium MMX-200	32	512	234
19	Royal Computer Synergy Best Buy	Pentium MMX-200	32	512	226
20	ProGen Discover MPEG P166	Pentium-166	16	512	196



*Best Buy

Word 7.0 for Windows 95 · Excel 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

HOW WE TEST All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

There's NO image we can't improve.™

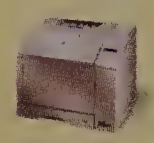
PAGEWORKS 20 & 12

PageWorks™ from Minolta. The most affordable laser printers in their class.

If your business could use some help with its image, consider Minolta's PageWorks monochrome line of laser printers. The PageWorks 20 may be the best value in network laser printers. It boasts a hefty 100MHz processor for maximum quality and throughput speed (20 ppm), heavy duty cycles, and optional workgroup networking capabilities. What's more, it can handle up to 13" x 19" paper sizes (perfect for those large documents, like the 1040 long form), and has a standard 650-sheet, two-drawer capacity. You can even upgrade by adding Adobe® PostScript® and duplex handling.

PAGEWORKS 6L

PAGEWORKS 6e



COLOR PAGEWORKS

Likewise, it doesn't take an audit to see the PageWorks 12 is the most affordable laser printer in its class. Offering 12 ppm output and heavy duty cycles, it's powered by a 100MHz processor. It also has a standard 750-sheet capacity and optional networking capability.

For over 10 years, Minolta has been one of the world's largest manufacturers of laser printer engines. That field-proven reliability allows us to offer a new line of laser printers with unparalleled quality and value.

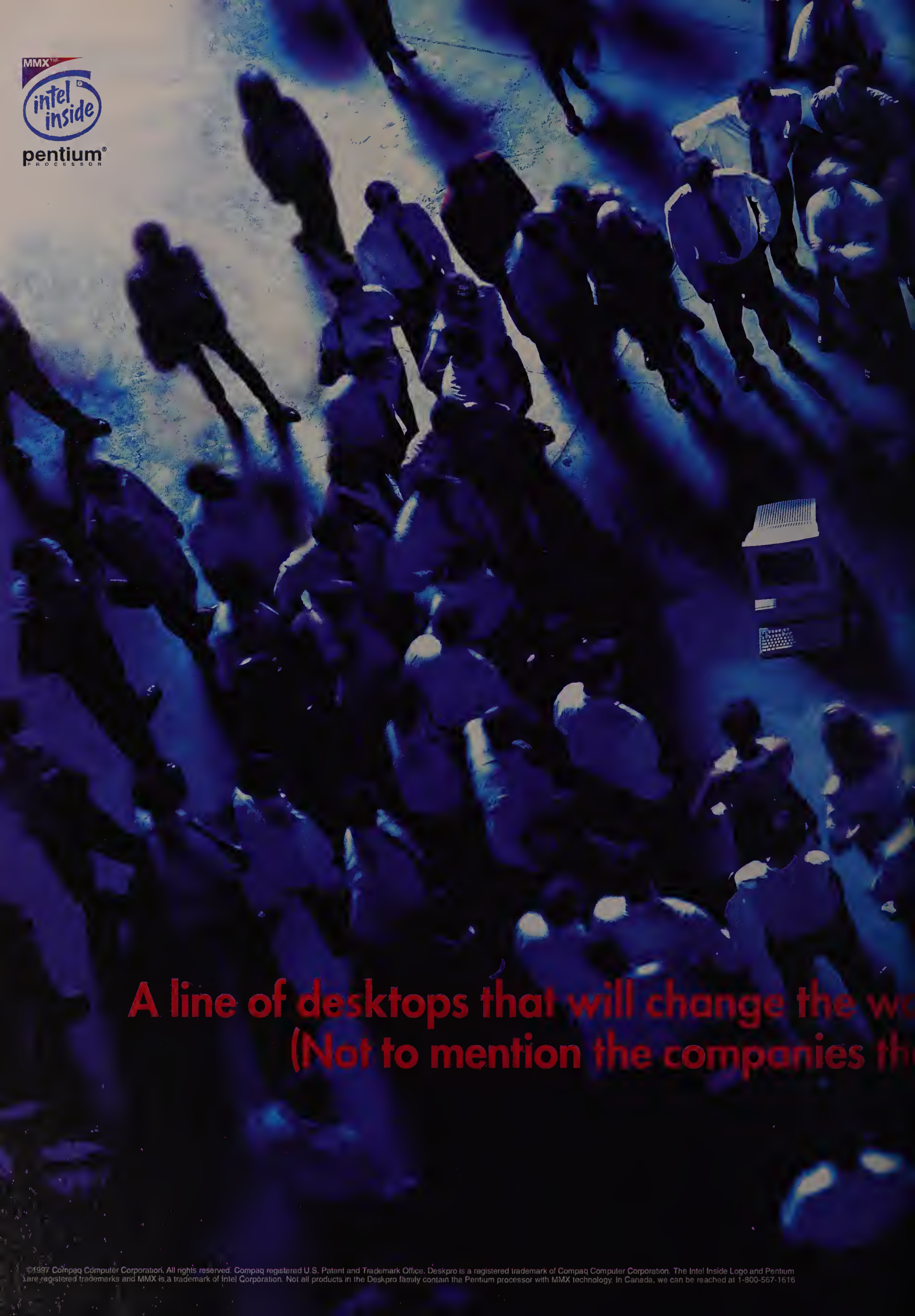
For more information, visit our Web site at www.minoltaprinters.com/pwd1. Or call 1-888-2MINOLTA, ext. 32, and we'll send you a free CD-ROM. See for yourself what we can do for your image.

MINOLTA

ONLY FROM THE MIND OF MINOLTA®

Circle 153 on reader service card

1997 Minolta Co., Ltd. Osaka, Japan. PageWorks and "There's NO image we can't improve" are trademarks and "Only from the mind of Minolta" is a registered trademark of Minolta Co., Ltd. Adobe and PostScript are registered trademarks of Adobe Systems Incorporated. All other trademarks or registered trademarks are the property of their respective companies. Information herein is subject to change without notice.



©1997 Compaq Computer Corporation. All rights reserved. Compaq registered U.S. Patant and Trademark Office. Deskpro is a ragistered trademark of Compaq Computer Corporation. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Not all products in the Deskpro family contain the Pentium processor with MMX technology. In Canada, we can be reached at 1-800-567-1616

ou look at desktops.
ake them.)
They're on every desk in your office. They're one of the largest computer investments your company can make.
Yes, choosing a desktop is a major decision. Companies are looking deeper than specs for real business solutions. Do they have the technology you need? Are they flexible enough to change and grow as your company does? Can you manage them easily and cost effectively?
At Compaq, we understand your need for answers. It's reflected in every feature and innovation we've designed into the newest Compaq Deskpro line.
Inside the Deskpro 2000, 4000 and 6000 series you'll find the type of innovative thinking that's made Compaq the industry leader in desktops. Useful innovation that will satisfy your changing needs. Technology configured to allow your end users to do more faster. Improved Intelligent Manageability for even greater control over your desktops from a single location. New aggressive pricing, the most aggressive Compaq has ever offered. And an incredibly low cost of ownership.
The new Deskpro line. They're unlike any other desktops on the market. Because we believe innovation should extend far beyond a spec box. Don't you?
For more information about the Deskpro series and the reseller nearest you, visit us at www.compaq.com/products/desktops, or call 1-800-345-1518.
COMPAQ

Quantex's support policies are strong: You get a three-year warranty on parts and one year for labor, plus free on-site service for the first year and seven-days-a-week technical support. Our readers rate Quantex's record of support as among the best in the industry, a welcome improvement over its showing in past months. However, the company's system reliability score is still only fair.

5 POLYWELL POLY 500QX

PRO: Very low price, tidy interior, good home software bundle

CON: Performance is slow for its class, blurry monitor, poor keyboard

Polywell's Poly 500QX leads the non-Intel parade on the Budget Desktops chart this month. With its bargain-basement $1295 street price and competent performance, this AMD K5-PR166–based minitower is one the first systems without an Intel CPU to ever earn a Best Buy on *PC World*'s Top 20 Desktops charts.

While the Poly 500QX lacks some of the spit-and-polish we're used to seeing at the top of the charts, there's no denying the value of this low-cost multimedia PC. It turned in a PC WorldBench score of 213—identical to that of the Gateway 2000 G5-166 M, a Pentium MMX-166 system that sits at third place. A 2.5GB hard disk provides good storage for the Poly 500QX, and we liked the speaker set. There is also a 12X CD-ROM drive and a 33.6-kbps modem, and the home-oriented software bundle ranges from Microsoft Works to The Magic School Bus.

A Diamond Stealth 3D 2000 card provides good 3D graphics acceleration, but our test unit's 15-inch monitor displayed a blurry image. We also disliked the Keytronics keyboard, which seemed poorly designed with awkwardly sized keys.

Polywell Poly 500QX

The putty-colored Poly 500QX does have some interesting design touches, though—for example, the power button sits on a raised section of the chassis. Inside, we found plenty of room to maneuver, with four free card slots and four open SIMM sockets for easy upgrades. A fan produces a cross-breeze that cools down the processor.

Polywell provides decent support. The documentation—a fancy black affair that looks like it could be a Cadillac owner's manual—has both an index and a glossary but, oddly, doesn't cover basics like system setup. The warranty is one of the longest you'll find: It covers parts for three years and labor for five. Technical support lines are toll-free and open 12 hours per weekday and 8 hours on Saturday.

USA Flex Performer

New This Month

The following PCs made our Budget Desktops chart for the first time this month. For brief reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

8 USA FLEX PERFORMER

PRO: Great performance, affordable price, large software bundle

CON: RAM upgrades could be a challenge

Our Budget Desktops chart has been a battleground for new CPUs, with entries from Intel, AMD, and now Cyrix all skirmishing for a piece of the action. This month the Flex Performer from USA Flex carries the Cyrix banner into the fray, using a Cx6x86MX-PR200 processor to post an impressive PC WorldBench score of 235. This decked-out machine can take on even the best Pentium MMX-200 PCs, yet it costs just $1999—nearly $200 less than the average for PMMX-200 systems.

The Flex Performer's PR200 CPU actually runs at an efficient 150 MHz. Cyrix uses a large primary cache and sophisticated pipelining to eke out performance without increasing the clock speed. However, in tests performed for our August *Top of the News* section, MMX performance was mixed (see "Cyrix Powers $2100 Pentium II–Class PCs"). A 6x86MX-200 chip lagged behind the Pentium competition in our Adobe Photoshop, Fractal Design Ray Dream Studio, and Macromedia Director tests. It's something to keep in mind when you make a purchase decision.

The Flex Performer comes well appointed, with a sharp, 17-inch MAG InnoVision monitor mated with a 4MB Matrox Millennium graphics card. A pair of Altec Lansing ACS 250 speakers has enough wattage to fill even a large space with sound, while the Ensoniq Audio PCI card—Ensoniq cards are found in many Top 20 desktops—provides wavetable MIDI playback. USA Flex also includes a 3Com/U.S. Robotics 56-kbps modem, which means using an ISP that supports the x2 specification.

The generic, putty-colored Flex Performer isn't much to look at, but upgrades are simplified by the easy-open case and a relatively clean interior. Unfortunately, the stiff IDE cables block free access to the four available SIMM/DIMM sockets, so adding memory could be difficult.

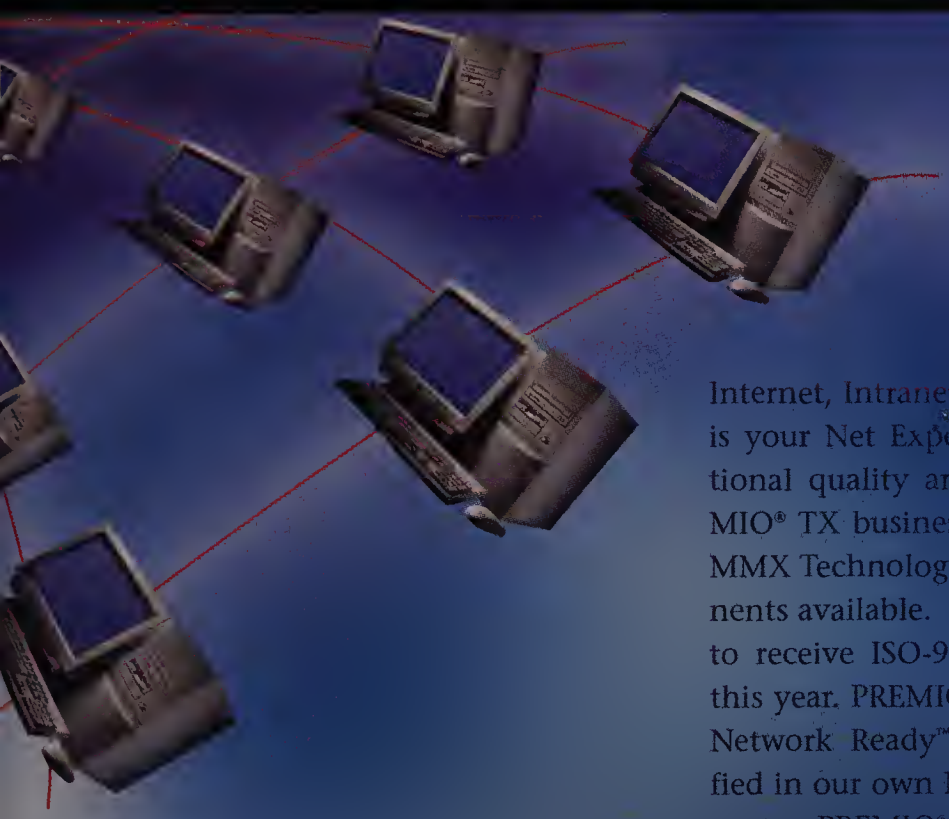
USA Flex pours on the software, with enough bundled applications and titles to keep you noodling around for hours. You'll find eleven CD-ROMs that address entertainment as well as productivity for both home and office. It may even be too much of a good thing: After all, how many dictionaries and encyclopedias do you really need?

The company's documentation is basic yet effective, but we prefer better integration than the separate, component-specific manuals that come with this system. USA Flex provides a strong three-year warranty on parts and labor, plus toll-free technical support 24 hours a day (weekends included). However, we don't have enough reader fax-back survey data to rate the company's system reliability or the quality of its support. ▶

Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Budget Desktops chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- **DirectWave Blue Thunder P133 MVP Pro**
- **DTK Quin-57M/PM233**
- **Quantex QP6/266 WS-3x**
- **TigerDirect AMD K6 233**



Internet, Intranet, [illegible] PREMIO™ is your Net Expert. [illegible] exceptional quality and reliability, the PREMIO® TX business desktops come with MMX Technology™ and the best components available. In fact, we are scheduled to receive ISO-9002 certification in July this year. PREMIO® TX systems are 3Com Network Ready™ and NetWare®YES certified in our own Novell® Labs approved test center. PREMIO® systems and workstations are optimized to run with Windows NT™, Solaris® and SCO® Unix. Therefore, they fit perfectly into any network of any size in any department. PREMIO® systems have received rave reviews from PC Magazine, PC World and Windows Magazine. Together with strong strategic alliance and fast time-to-market of the latest products, PREMIO® products increase your total benefit of ownership while decreasing maintenance cost with features such as the Desktop Management Interface (DMI). To know more about PREMIO®, log on to our web site at www.premiopc.com/pcworld or call us at 800-677-6477.

- Fast Pentium® 166MHz/200MHz processor-based systems with MMX technology™
- 16MB or more RAM, 2.0GB or higher HDD, 16X CD-ROM and quality components from 3Com®, ATI®, Adaptec®, Intel™ and others.
- 3Com Network Ready Partner™
- Optimized for 32-bit environment and Windows NT™ Windows 95, NetWare® 4.x, Solaris® and SCO® Unix compatible, DMI-enabled
- NetWare®YES certified in PREMIO's Novell® Labs approved test center
- Pending ISO-9002 certification
- 3-year warranty with optional on-site service
- Toll free technical support
- GSA and CMAS approved

MMX™ intel inside pentium® PROCESSOR

Premio Systems are Net perfect™

Any Net, Any Where

PREMIO®

800-677-6477

www.premiopc.com/pcworld

PREMIO is a registered trademark of Premio Computer, Inc. Intel, the Intel inside logo, Pentium and the Pentium Processor logo are registered trademarks of Intel Corporation. All other trademarks and brand names are the property of their respective owners.

Circle 183 on reader service card

MICRON™ VETIX™ LXI-N

Intel 200MHz Pentium® Pro processor
32MB ECC EDO RAM
2GB Ultra-Wide SCSI-3 hard drives

STANDARD FEATURES

Dual Pentium Pro ZIF sockets
256KB integrated L2 cache
Memory upgradable to 1GB (8 DIMM slots)
5 PCI, 2 ISA, 1 shared ISA/PCI, 9 drive bays
Integrated Adaptec PCI Ultra-Wide SCSI-3 controller
Integrated Intel EtherExpress™ Pro 100 controller
12X SCSI-2 CD-ROM
Dedicated server technical support, 7x24
5-year/3-year Micron Power℠ limited warranty
1-year next-business-day on-site service*

$2,999
Bus. lease $1 2/mo

MICRON VETIX MXI-N

Intel 200MHz Pentium Pro processors
64MB ECC EDO RAM
2GB Ultra-Wide SCSI-3 hard drives

STANDARD FEATURES

Dual Pentium Pro ZIF sockets
256KB integrated L2 cache
Memory upgradable to 1GB (8 DIMM slots)
8 open expansion slots: 5 PCI, 2 ISA, 1 shared ISA/PCI
Integrated Adaptec PCI Ultra-Wide SCSI-3 controller
Integrated Intel EtherExpress Pro 100 controller
12X variable speed SCSI CD-ROM
5 internal, hot-swappable, hard drive array bays (upgradable to 10)
3 external 5.25" media bays
1 (one) 330 watt power supply standard (upgradable to 3 for added redundancy)
Dedicated server technical support, 7x24
5-year/3-year Micron Power limited warranty
1-year next-business-day on-site service*

$4,699
B s. lease $16 mo

MICRON VETIX LXI

Intel 200MHz Pentium Pro processor
64MB ECC EDO RAM
4GB Ultra-Wide SCSI-3 hard drive

STANDARD FEATURES

Dual Pentium Pro ZIF sockets
256KB integrated L2 cache
Memory upgradable to 1GB (8 DIMM slots)
5 PCI, 2 ISA, 1 shared ISA/PCI, 9 drive bays
Integrated Adaptec PCI Ultra-Wide SCSI-3 controll
Integrated Intel EtherExpress™ Pro 100 controller
12X SCSI-2 CD-ROM drive
15" Micron 500FGx, .28dp(13.7" display)
Microsoft® Windows NT® Server 4.0 (10-user license)
Intel LANDesk® Server Manager 2.52
Dedicated server technical support, 7x24
5-year/3-year Micron Power limited warranty
1-year next-business-day on-site service*
NOS Support (3 incident resolutions/ 1st year), 7x24

$5,09

On-site service for the Micron Vetix is provided by Digital Equipment Corporation and is optional

NETWORK OPTIONS

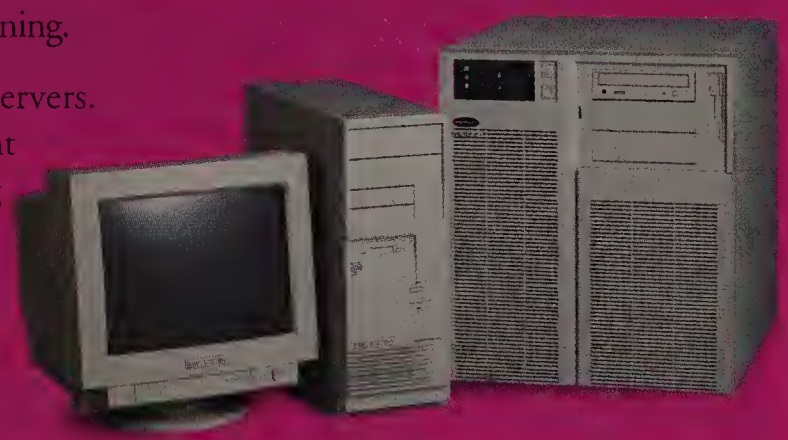
3Com OfficeConnect Hub 8/TPC	$149	Sony 4/8GB SCSI DDS-2 tape backup drive with tape	$749
3Com OfficeConnect Switch 140	$969	Cheyenne ArcServe/InocuLAN-backup/antivirus	$499
APC Smart-UPS 700 with PowerChute plus software	$389	Novell IntranetWare 5-user licence (for LXI-N and MXI-N only)	$699

intel inside
PENTIUM PRO PROCESSOR

Powerful Pair.

e things were meant to be together. Take our ClientPro PCs and Vetix servers.
powerful pair effortlessly gets your network running – and keeps it running.

n you look for networking solutions, look first to Micron Vetix servers.
packed our hardy MXI server chock-full of features, like redundant
r supplies, and high degree, fault-tolerant components including
swappable hard drives. And, we made our LXI server models
ndable, reliable and tough. Complement your server with our
ntPro desktops. We've designed them to be easy to
p, easy to upgrade and easy to network. That means you
ce potential downtime and lower your total cost of ownership.



of all, we back our products. Every day. When you buy Micron, you can custom configure your system to meet your
, so it's homegrown, not mass produced. When you buy Micron, you get the steadfast 24-hour customer support
we're famous for. And when you buy Micron, you get one of the best warranties in the business, from one
e best companies in the business.

e things were meant to be together, all right. Like you and Micron.

RON CLIENTPRO® MTE

- 166MHz Pentium processor with MMX™ technology
- 3 EDO RAM
- 3 SMART EIDE hard drive
- Micron 500FGx, .28dp (13.7" display)

ANDARD FEATURES

- B pipeline burst cache, flash BIOS, DMI Support
- 3C905 network adapter
- grated S3 ViRGE/DX graphics
- elerator, 2MB EDO RAM
- grated wavetable sound
- osoft Intellimouse,™
- osoft Windows® 95
- LANDesk Client Manager
- ar/3-year Micron Power limited warranty

$1,549
B lease $53/mo

MICRON POWER℠ WARRANTY

- 5-year limited warranty on microprocessor and main memory
- 3-year limited parts-only system warranty (1-year for TransPort VLX)
- 1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
- 30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
- 30-day money back policy
- 24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

Designed for Microsoft Windows 95

Micron Sales Hrs: Mon-Fri 6am-10pm, Sat 7am-5pm (MT) Technical Support Available 24 Hours A Day, 7 Days A Week • Toll free from Mexico: 95-800-708-1755 • Toll free from Canada: 800-708-1758 • Toll free from Puerto Rico: 800-708-1756 • International Sales: 208-893-8970 International Fax: 208-893-7393

1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. Other product names used in this publication are for identification purposes only and may be trademarks of their respective companies.

Call now to order.
800-494-8905
www.micronpc.com

MICRON ELECTRONICS ™

CONFIGURED FOR YOUR LIFE

PC WORLD

TOP 20 NOTEBOOK PCs

	POWER NOTEBOOKS	Last month	Month tested	Street price (7/16/97)	CPU	Comments
1	WinBook FX 800/965-9349 www.winbook.com	1	Sept 97	$3999	Pentium MMX-166	Very fast multimedia notebook has 48MB of RAM and true-color screen.
2	CTX EzBook 764MT 800/888-9052 www.ctxintl.com	3	Sept 97	$2999	Pentium MMX-166	A $250 cut pushes fast PMMX-166 into Best Buy territory; skimpy support.
3	Micron Transport XKE P166 A 800/393-8935 www.micronpc.com	2	Sept 97	$5149	Pentium MMX-166	Superfast, fully loaded, pricey; 6-hour battery, fast CD-ROM drive.
4	Dell Latitude LM M166ST 800/388-8542 www.dell.com	4	June 97	$3899	Pentium MMX-166	Speedy notebook boasts multimedia and nearly 6-hour battery life; no modem.
5	ArmNote TS97MX 800/765-1767 www.armcomputer.com	6	Sept 97	$2799	Pentium MMX-200	Fast PMMX-200 edges up with $200 cut; desktop CPU invites heat damage.
6	Transmonde Vibrant 166Tmx 888/988-2883 www.transmonde.com	5	Sept 97	$3699	Pentium MMX-166	Sturdy but heavy notebook really flies; support polices are thin.
7	Gateway 2000 Solo 9100 XL-166 800/846-2000 www.gateway.com	8	Sept 97	$5699	Pentium MMX-166	Tied for fastest notebook, but still very expensive even after $300 price cut.
8	Gateway 2000 Solo 2200 S5-166 800/846-2000 www.gateway.com	10	May 97	$3989	Pentium MMX-166	Big $450 price drop moves speedy desktop replacement up two spots.
9	Gateway 2000 Solo 2100 S5-150 800/846-2000 www.gateway.com	9	Apr 97	$3399	Pentium MMX-150	Price is $350 lower this month on reasonably fast notebook.
10	WinBook LM 800/965-9349 www.winbook.com	7	May 97	$3199	Pentium-133	Last non-MMX power notebook hangs on; keyboard could be better.
	BUDGET NOTEBOOKS					
1	CTX EzBook 750MS 800/888-9052 www.ctxintl.com	6	Aug 97	$1799	Pentium MMX-150	$400 price drop vaults fastest budget notebook to top; short on support.
2	Compaq Armada 1520DM 800/345-1518 www.compaq.com	1	Aug 97	$2039	Pentium-133	Trim, dual-scan P-133 gets $160 price cut; great first notebook.
3	Toshiba Satellite Pro 430CDS 800/334-3445 www.computers.toshiba.com	2	July 97	$1699	Pentium-120	Great keyboard on well-designed but slow P-120.
4	Fujitsu LifeBook 420D 888/466-8434 www.fujitsu-pc.com	7	Sept 97	$1599	Pentium-120	$199 price cut on already cheap P-120 with great battery and ergonomics.
5	WinBook XP5 Pro P150 800/965-9349 www.winbook.com	3	June 97	$2599	Pentium-150	Fast notebook sports vivid active-matrix screen, modem, CD-ROM drive.
6	AMS TravelPro 105CS 800/886-2671 www.amstech.com	4	Sept 97	$1995	Pentium-150	Good performer, quick CD-ROM drive, long warranty; display lacks clarity.
7	Toshiba Satellite 200CDS 800/334-3445 www.computers.toshiba.com	5	July 97	$1299	Pentium-100	Entry-level corporate notebook is cheapest on chart, but it's dog-slow.
8	Gateway 2000 Solo 2100 S5-120 800/846-2000 www.gateway.com	10	Jan 97	$1899	Pentium-120	$200 price drop for fast notebook; short battery life.
9	Fujitsu LifeBook 435Dx 888/466-8434 www.fujitsu-pc.com	–	NEW	$1999	Pentium MMX-133	First PMMX-133 notebook has great performance, fine design; display is poor.
10	AcerNote Light 382 800/733-2237 www.acer.com/aac	–	July 97	$1799	Pentium-150	$200 cut puts very light notebook back on chart; poor reliability rating.

Best Buy See features chart, page 270; performance chart, page 272.

[1] Includes computer, adapter, power cord, floppy drive, and CD-ROM drive. May also include second battery, headphones, and other components supplied by vendor. [2] Insufficient data.

MORE GOOD DEALS AWAIT, as several vendors deliver big price breaks on their notebooks. The CTX EzBook 750MS jumped from sixth place to the top of the budget chart after the company sliced $400 off its price. But you'll still have to pay plenty for the biggest displays. We tested a couple of notebooks that pack fast Pentium MMX processors and roomy 13.3-inch active-matrix screens, but hefty weights and price tags kept them off the chart. The $5199 NEC Versa 6200MX, for example, tips the scales at 9.4 pounds; the AMS TravelPro 2010 CX166 is only somewhat easier to bear at 9 pounds and $4495.

SCORECARD

★ Overall rating	PC WorldBench score/ rating	Price	Vendor's system reliability	Features and design	Vendor's support quality/policies	Battery life (hours:min)/ rating	Traveling weight	Reader service number
87	218/outstanding	average	average	outstanding	average/poor	4:26/good	heavy	707
86	217/outstanding	inexpensive	[2]	very good	[2]/poor	4:40/good	heavy	708
85	221/outstanding	very expensive	above average	very good	[2]/fair	6:17/outstanding	heavy	709
85	212/outstanding	average	average	very good	average/fair	5:52/very good	heavy	710
84	219/outstanding	very inexpensive	[2]	good	[2]/good	3:25/good	average	711
84	217/outstanding	average	average	outstanding	below average/poor	4:08/good	heavy	712
83	221/outstanding	very expensive	average	outstanding	below average/fair	5:30/very good	very heavy	713
83	218/outstanding	average	average	very good	below average/fair	3:46/good	average	714
83	199/very good	inexpensive	average	outstanding	below average/fair	3:12/good	average	715
83	182/good	inexpensive	average	good	average/poor	5:46/very good	average	716
Power scorecard weightings ▶	Performance 22 percent	Price 14 percent	Reliability 22 percent	Features 16 percent	Support 10 percent	Battery life 8 percent	Weight 8 percent	
81	198/outstanding	average	[2]	satisfactory	[2]/poor	4:21/good	average	717
81	151/good	average	average	good	above average/fair	3:39/good	average	718
79	141/good	inexpensive	average	satisfactory	below average/good	4:10/good	average	719
79	145/good	inexpensive	[2]	satisfactory	[2]/fair	4:50/very good	heavy	720
79	183/very good	expensive	average	very good	average/poor	3:24/good	average	721
79	168/very good	average	[2]	good	[2]/fair	3:44/good	heavy	722
79	91/poor	very inexpensive	average	satisfactory	below average/good	3:51/good	heavy	723
79	171/very good	average	average	satisfactory	below average/fair	2:15/satisfactory	average	724
78	191/very good	average	[2]	satisfactory	[2]/fair	3:42/good	heavy	725
78	170/very good	average	below average	good	[2]/fair	6:45/outstanding	average	726
Budget scorecard weightings ▶	Performance 14 percent	Price 22 percent	Reliability 22 percent	Features 16 percent	Support 10 percent	Battery life 8 percent	Weight 8 percent	All products: 908

POWER NOTEBOOKS

This Month's Best Buys

1 WINBOOK FX

PRO: Very fast, great display and documentation

CON: Pointing device had problems, weighty

You want speed, you crave power, but you can't imagine dropping $5000 for something you stuff into an airplane's overhead bin. Well, check out the WinBook FX, a fully loaded multimedia notebook that delivers breathtaking performance at a competitive price.

WinBook FX

The brilliant 12.1-inch active-matrix display is well protected by a sturdy screen casing, and the keyboard provides comfortable tactile feedback. But on the unit that we reviewed, we encountered problems with the eraser-head pointing device: Its tip came off when we tried to move the cursor around the screen, and it pushed down nearby keys when we pressed it hard to one side. ▶

TOP 20 NOTEBOOK PCs — STANDARD FEATURES

	POWER NOTEBOOKS	CPU	Traveling weight (pounds)[1]	RAM (MB)	Hard drive (GB)	Color screen type	Screen diagonal (inches)	Screen resolution	Maximum screen colors	Battery type	Pointing device
1	WinBook FX*	Pentium MMX-166	9	48	3	active	12.1	800 x 600	16.8 million	lithium ion	eraserhead
2	CTX EzBook 764MT*	Pentium MMX-166	9.4	40	1.4	active	12.1	800 x 600	16.8 million	NiMH	touchpad
3	Micron Transport XKE P166 A	Pentium MMX-166	10	32	3.1	active	13.3	1024 x 768	65,536	lithium ion	touchpad, eraserhead
4	Dell Latitude LM M166ST	Pentium MMX-166	9.2	40	2.2	active	12.1	800 x 600	65,536	lithium ion	touchpad
5	ArmNote TS97MX	Pentium MMX-200	8.4	32	2.1	active	12.1	800 x 600	65,536	lithium ion	touchpad
6	Transmonde Vibrant 166Tmx	Pentium MMX-166	10.4	48	3.1	active	12.1	800 x 600	65,536	NiMH	touchpad
7	Gateway 2000 Solo 9100 XL-166	Pentium MMX-166	10.4	64	3	active	13.3	1024 x 768	16.8 million	lithium ion	touchpad
8	Gateway 2000 Solo 2200 S5-166	Pentium MMX-166	8.8	40	2.2	active	12.1	800 x 600	65,536	lithium ion	touchpad
9	Gateway 2000 Solo 2100 S5-150	Pentium MMX-150	8.8	40	1.3	active	12.1	800 x 600	65,536	lithium ion	touchpad
10	WinBook LM	Pentium-133	8.6	16	1.1	active	12.1	800 x 600	65,536	lithium ion	touchpad
	BUDGET NOTEBOOKS										
1	CTX EzBook 750MS*	Pentium MMX-150	8.6	16	1.4	dual-scan	12.1	800 x 600	65,536	NiMH	touchpad
2	Compaq Armada 1520DM*	Pentium-133	7.8	16	1.1	dual-scan	11.3	800 x 600	65,536	lithium ion	touchpad
3	Toshiba Satellite Pro 430CDS	Pentium-120	8.8	16	1.4	dual-scan	11.3	800 x 600	65,536	lithium ion	eraserhead
4	Fujitsu LifeBook 420D	Pentium-120	9.2	16	1	passive	11.3	800 x 600	256	NiMH	touchpad
5	WinBook XP5 Pro P150	Pentium-150	8.4	16	1.1	active	11.3	800 x 600	256	lithium ion	eraserhead
6	AMS TravelPro 105CS	Pentium-150	9.2	16	1.3	dual-scan	12.1	800 x 600	256	NiMH	touchpad
7	Toshiba Satellite 200CDS	Pentium-100	9.2	8	.8	dual-scan	11.3	800 x 600	65,536	NiMH	eraserhead
8	Gateway 2000 Solo 2100 S5-120	Pentium-120	8.2	16	1.1	dual-scan	11.3	800 x 600	65,536	NiMH	touchpad
9	Fujitsu LifeBook 435Dx	Pentium MMX-133	9.2	16	1.3	dual-scan	12.1	800 x 600	256	NiMH	touchpad
10	AcerNote Light 382	Pentium-150	8.4	16	1.4	dual-scan	11.3	800 x 600	256	NiMH	touchpad

*Best Buy ● Yes ○ No [1] Includes computer, adapter, power cord, floppy drive, and CD-ROM drive. May also include second battery, headphones, and other components supplied by vendor.

The flaw is probably an aberration with our test unit, but we advise potential buyers to try out the pointer before purchase if possible.

Otherwise, the WinBook FX sped through our PC WorldBench suite, posting a score of 218 that puts it among the fastest notebooks we've ever tested. The FX comes equipped with an ample 48MB of EDO DRAM and a large 3GB hard disk. You also get a fast 10X CD-ROM drive and an internal 33.6-kbps modem.

The 9-pound WinBook FX is no lightweight, but its lithium ion battery ran nearly 4.5 hours in our tests, despite the notebook's bright display. WinBook provides well-illustrated manuals, but the company skimps on support. The one-year warranty is too short, and there is no guaranteed turnaround time for repairs from the factory.

2 CTX EZBOOK 764MT

PRO: Fast and inexpensive; nice display

CON: Heavy; slow CD-ROM drive; short warranty

Fast, sturdy, and good to look at, the $2999 EzBook 764MT from CTX leapfrogs Micron's Transport XKE P166 A to seize second place on the Power Notebooks chart. Behind the move: a steep $250 price cut that enhances the value of this fast Pentium MMX-166 notebook. With a PC WorldBench score of 217, the EzBook is in the performance elite, and it comes outfitted with a generous 40MB of RAM despite the low price.

CTX EzBook 764MT

The 12.1-inch active-matrix display is crisp but is no match for the 13.3-inch screens found on some higher-price notebooks. The EzBook is well equipped for multimedia, although the full-size headphones seem clumsy in comparison to inconspicuous Walkman-style phones, and the 8X CD-ROM drive is among the slowest on the Power Notebooks chart.

		EXPANDABILITY					CUSTOMER SUPPORT			
CD-ROM drive speed	Modem speed (kbps)	Maximum RAM (MB)	Modular expansion bays	Bay for second battery	Optional docking station	Infrared port	Warranty for parts/labor (years)	Weekday toll-free support (hours)	Weekend support	Online support
10X	33.6	80	1	●	●	●	1/1	13	Sat.	BBS, WWW
8X	33.6	72	2	●	●	●	1/1	9	–	WWW
20X	33.6	128	2	●	○	●	3/1	24	Sat., Sun.	CIS, WWW
10X	–	72	1	●	○	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
8X	33.6	80	0	○	●	●	1/1	24	Sat., Sun.	AOL, BBS, WWW
8X	33.6	64	0	●	●	●	1/1	11	–	WWW
10X	33.6	192	2	●	●	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
10X	33.6	80	1	●	●	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
10X	33.6	40	1	●	●	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
6X	28.8	40	1	●	●	●	1/1	13	Sat.	BBS, WWW
6X	–	72	2	●	●	●	1/1	9	–	WWW
10X	33.6	64	1	●	○	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
10X	–	48	1	○	●	●	3/1	24	Sat., Sun.	BBS, CIS, WWW
10X	–	72	1	○	●	●	1/1	24	Sat., Sun.	WWW
8X	28.8	40	1	●	●	●	1/1	13	Sat.	BBS, WWW
10X	33.6	80	1	●	●	●	3/3	11	–	BBS, CIS, WWW
6X	–	40	1	○	●	●	3/1	24	Sat., Sun.	BBS, CIS, WWW
10X	–	40	1	●	●	●	1/1	24	Sat., Sun.	AOL, BBS, CIS, WWW
10X	–	80	1	●	●	●	1/1	24	Sat., Sun.	WWW
10X	–	64	0	○	○	○	1/1	24	Sat., Sun.	BBS, WWW

The EzBook can take two nickel–metal-hydride batteries at once, but you must remove both the internal floppy and CD-ROM drives—there is no dedicated battery bay. The notebook lasted almost 4.75 hours on one battery in our rundown tests. The keyboard is comfortable, and the touchpad is well tuned. The whole package weighs a hefty 9.4 pounds.

The manual is thorough and well written, but CTX's service and support are still a question. Toll-free tech support is limited to weekday business hours. We lack data to rate CTX's system reliability; however, our phone calls to technical support indicate fairly accurate and timely problem resolution.

BUDGET NOTEBOOKS

This Month's Best Buys

1 CTX EZBOOK 750MS

PRO: Impressive speed, nice sound for notebook speakers, $400 price cut

CON: Meager warranty, lackluster dual-scan screen, weak documentation

Money talks. That's the lesson from CTX's EzBook 750MS, which shot to the top of the budget chart following a $400 price slash that makes it among the most affordable systems here. This Pentium MMX-150 portable costs just $1799, yet notched a PC WorldBench score of 198 that is slightly ahead of the average for its CPU class. The EzBook is also the fastest notebook on the Budget Notebooks chart.

You'll have to make a few sacrifices for this low-cost power. The EzBook's dual-scan display is among the dullest we've seen, making it inappropriate for presentations. We found the system's power switch tricky to use—it must be pushed especially hard and held down for too long. Also, the system's documentation is far too rudimentary.

On the upside, the EzBook's battery life was almost 4.5 hours in our tests, and the software bundle is a decent starter package that includes ClarisWorks, Microsoft Plus, and LapLink for Windows 95. ▶

For those who like to play, CTX throws in a game pad, and the built-in stereo speakers sound terrific. Another work-and-play plus: When you have the AC adapter plugged in, you can pull out the EzBook's battery and use both the floppy and CD-ROM drives—so you could, for example, listen to an audio CD while using the floppy drive for doing business.

CTX EzBook 750MS

Unfortunately, CTX's warranty is pretty thin, covering parts and labor for only one year; and toll-free tech support is available only 9 hours per weekday. We haven't yet received enough fax-back survey data from readers to rank the company's service and system reliability.

2 COMPAQ ARMADA 1520DM

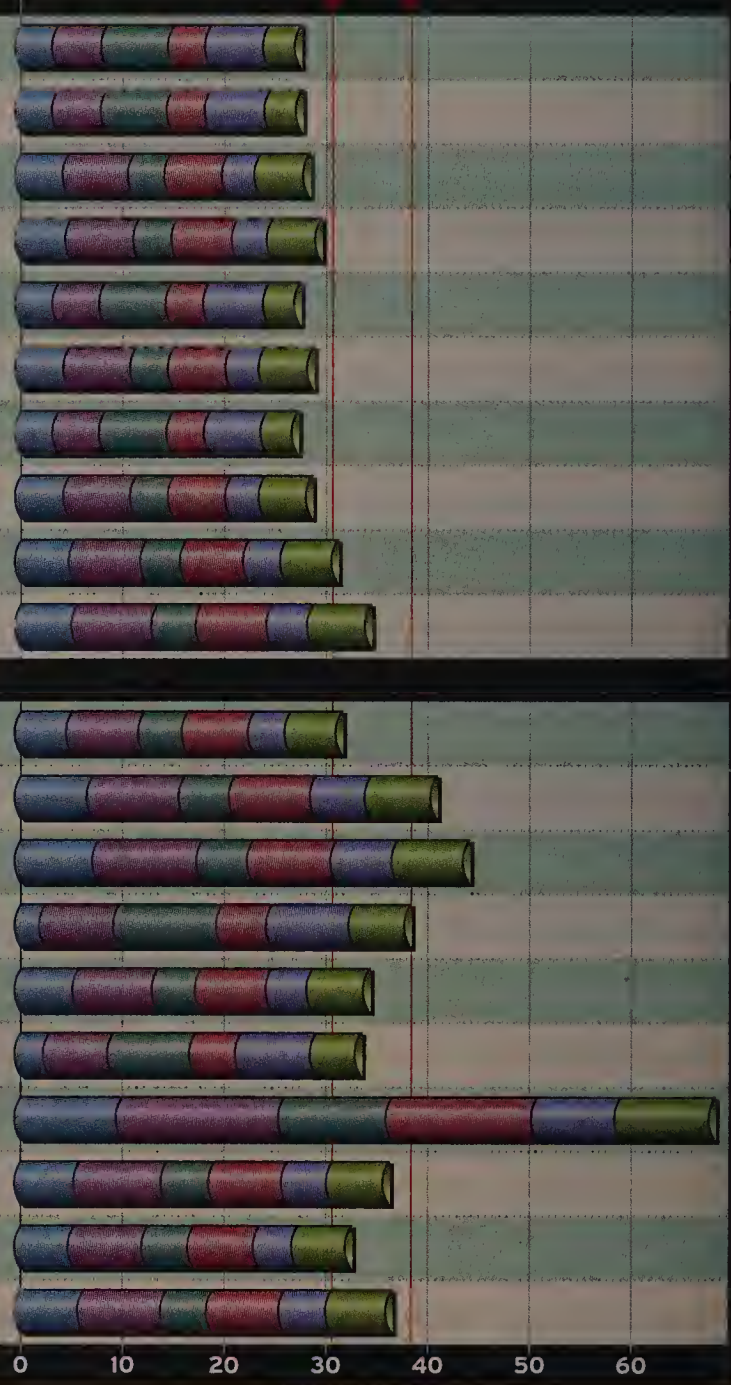
PRO: Great all-in-one design requires no external power adapter; $160 price cut

CON: Middling Pentium-133 performance, short warranty, short battery life

With its Pentium-133 CPU and 11.3-inch dual-scan display, the $2039 Compaq Armada 1520DM is among the priciest notebooks on the budget chart. So how does it earn a ▶

TOP 20 NOTEBOOK PCs — TEST REPORT

	POWER NOTEBOOKS	CPU	RAM (MB)	Secondary cache (K)	PC WorldBench score
1	WinBook FX*	Pentium MMX-166	48	256	218
2	CTX EzBook 764MT*	Pentium MMX-166	40	256	217
3	Micron Transport XKE P166 A	Pentium MMX-166	32	512	221
4	Dell Latitude LM M166ST	Pentium MMX-166	40	256	212
5	ArmNote TS97MX	Pentium MMX-200	32	256	219
6	Transmonde Vibrant 166Tmx	Pentium MMX-166	48	256	217
7	Gateway 2000 Solo 9100 XL-166	Pentium MMX-166	64	256	221
8	Gateway 2000 Solo 2200 S5-166	Pentium MMX-166	40	256	218
9	Gateway 2000 Solo 2100 S5-150	Pentium MMX-150	40	256	199
10	WinBook LM	Pentium-133	16	256	182
	BUDGET NOTEBOOKS				
1	CTX EzBook 750MS*	Pentium MMX-150	16	256	198
2	Compaq Armada 1520DM*	Pentium-133	16	256	151
3	Toshiba Satellite Pro 430CDS	Pentium-120	16	–	141
4	Fujitsu LifeBook 420D	Pentium-120	16	–	145
5	WinBook XP5 Pro P150	Pentium-150	16	256	183
6	AMS TravelPro 105CS	Pentium-150	16	256	168
7	Toshiba Satellite 200CDS	Pentium-100	8	–	91
8	Gateway 2000 Solo 2100 S5-120	Pentium-120	16	256	171
9	Fujitsu LifeBook 435Dx	Pentium MMX-133	16	256	191
10	AcerNote Light 382	Pentium-150	16	256	170



*Best Buy

Word 7.0 for Windows 95 · Excel 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

HOW WE TEST All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

KDS

What are you looking at?℠

When you buy a Visual Sensations™ monitor, it's backed by the best support in the business with the

KDS Advanced Replacement Express Service.

KARES eliminates factory returns and dealer swaps by letting customers call KDS directly if a Visual Sensations ever needs service. KDS then rushes them a replacement by FedEx delivery, keeping their downtime to a minimum.

Resellers like it because it eliminates them from the post sales cycle. And customers love it because it gives them

peace of mind for the lifetime of their purchase.

Of course, there are plenty of other reasons for choosing Visual Sensations. Including the fact that with a complete line of 14-, 15-, 17-, 19- and 21-inch monitors — plus LCD flat-panel display and touch-screen models — there's one that's designed and priced right for every application.

Take a closer look at Visual Sensations by calling **1-800-237-9988** or checking out the KDS Web Site at **www.kdsusa.com**.

Because if you're looking for great service with a great monitor,

no one supports you like KDS does with KARES.

Order Desk: 800-285-8443

© 1997 KOREA DATA SYSTEMS CO., LTD. All rights reserved. Visual Sensations is a trademark of KOREA DATA SYSTEMS CO., LTD.

Circle 170 on reader service card

SATELLITE TV AND TURBO INTERNET™ NOW SERVED UP ON ONE DISH.

(COOL, HUH?)

INTRODUCING DirecDuo.

Imagine two satellites deep in space. One is broadcasting all the greatest, wildest Web sites from the Internet, at blistering speeds up to 400 Kbps. The other transmits over 200 TV channels of your favorite sports, movies, news, family shows and more. Now imagine getting all of this content—enough to entertain a small village—right in your home, through just one dish.

Turbo Internet now as low as **$19.95** per month*!

Act now and receive $100 service credit from DirecPC!

WHOA...

With DirecDuo, the best of TV and the Internet finally converge. That's because DirecDuo brings you the fastest Internet access available nationwide from DirecPC™, plus hundreds of top-quality digital TV channels from DIRECTV® and USSB®. Existing subscribers to DirecPC, DIRECTV or USSB can upgrade to DirecDuo at a reduced cost. Even better, all DirecDuo owners can get access to the Internet at speeds of up to 200 Kbps for just $19.95 per month*, with the new Moon Surfer™II plan from DirecPC. And, if you subscribe to any DirecPC package before December 31, 1997, you'll receive a $100 credit, applicable towards your first year of service.† High-speed Internet access has never been more affordable!

So take advantage of everything DirecDuo has to dish out. Call 1-800-DIRECPC ext. 124 today for the retailer nearest you, or visit us on the Web at www.direcduo.com.

DirecPC + DIRECTV® USSB® = DirecDuo

1-800-DIRECPC ext.124 or www.direcduo.com

HUGHES NETWORK SYSTEMS
A HUGHES ELECTRONICS COMPANY

Copyright 1997, Hughes Network Systems, a unit of Hughes Electronics Corporation. DirecPC, Moon Surfer, Turbo Internet and DirecDuo are trademarks of Hughes Network Systems, a unit of Hughes Electronics Corporation. DIRECTV is a registered trademark of DIRECTV, Inc., a unit of Hughes Electronics Corporation. USSB is a registered trademark of United States Satellite Broadcasting Company, Inc. *Price applies to single-user system only. Moon Surfer II plan: Up to 200 Kbps for $19.95/month from 6pm-6am M-F, all day weekends. From 6am-6pm M-F, cost is ¢50/MB. ISP charges not included. †$100 service credit applies to DirecPC Personal Edition users activating a new Turbo Internet account by 12/31/97. Service credit will be equally distributed over first 12 months of service. Not for resale. All DirecPC packages subject to DirecPC Fair Access Agreement.

DP-560 Laser Printer
The trustworthy sibling.

True 600 DPI begets professional quality text. 6 PPM, Windows compatible.
$279*

The Functional Family

DP-570 Laser Printer
The nurturing, dependable spouse.

Prints complex charts, graphs and halftones expeditiously. True 600 DPI, PCL6 printing. 6 PPM, Windows-DOS compatible.
$349*

DP-580 Laser Printer
The gifted yet magnanimous sibling.

Very presentable, high-end resolution—1200 DPI class.
$399*

MIP-650
The multi-faceted matriarch.

Fax/copy/print/scan in one. True 600 DPI, GDI printing. 6 PPM, Windows compatible. **$699***

MIP-670
The sage and benevolent grand patriarch.

Fax/copy/print/scan and more. True 600 DPI, PCL6 printing. 6 PPM, Windows-DOS compatible. **$849***

mita™
can help
www.mita.com

* Expected selling price. ©1997 Mita Copystar America, Inc. As an ENERGY STAR® Partner, Mita Copystar America, Inc. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Best Buy? Simple: The Armada boasts one of the most innovative and convenient designs you can find in a notebook.

Compaq outfits the Armada with a 10X CD-ROM drive, a 33.6-kbps modem, and a 1.1GB hard drive. The 16-bit stereo sound system is terrific as well. And the PC WorldBench score of 151 is acceptable if you're not doing heavy number-crunching or fancy presentations.

Where the Armada pulls away from the pack is in its integrated, all-in-one design. The CD-ROM and floppy drives, and even the power supply, are built into the main unit. That means fewer loose components to forget or lug around. All you have to remember is the power cord—and not even that if you plan to work for less than 3.5 hours at a stretch, which is about how long the Armada's lithium ion battery ran in our tests. Even with all that's packed into it, the notebook travels at only 7.8 pounds—among the lightest on the chart.

Although preferences vary depending on the individual, we found the keyboard and touchpad to be easy to work with. The keyboard has a lively feel, and the touchpad is appropriately sensitive. The Armada's dual-scan display is typical—you get color, but next to an active-matrix screen it looks lifeless. And as with all dual-scans, you can't view the screen from much of an angle without losing the picture.

Compaq Armada 1520DM

The volume control of the system's stereo sound consists of two buttons (up and down) instead of the usual dial or sliding tab; press either button and you get a nice, audible click that corresponds to the setting increment.

The warranty is for only one year, but Compaq guarantees a two-day turnaround on factory repairs and provides round-the-clock toll-free support. According to readers responding to our fax-back survey, the company scores above average in support and average in system reliability. There have been reports in the industry press of trouble with Armada systems, though it's too early to assess whether this will affect our surveys of Compaq's reliability.

New This Month

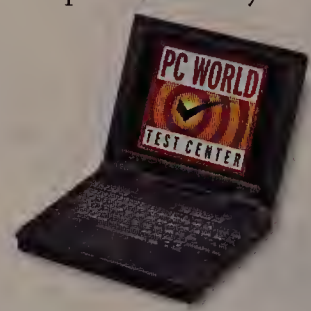
The following PC made our Budget Notebooks chart for the first time this month. For brief reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

9 FUJITSU LIFEBOOK 435DX

PRO: Very fast and solid, comfortable keyboard and mouse, 24-hour support

CON: Bulky, poor sound, dark dual-scan screen, no productivity programs

Sometimes you have to take a step backward to move ahead. That's the case with the Fujitsu LifeBook 435Dx. This no-frills corporate notebook provides fast performance at a bargain price—a potent combination. The secret: Intel's lowest-clock-speed mobile Pentium MMX processor yet, the PMMX-133.



Fujitsu LifeBook 435Dx

The $1999 LifeBook 435Dx is the first PMMX-133 notebook we've tested, and the results were impressive. Despite its slower clock speed, the LifeBook posted an impressive PC WorldBench score of 191—which is about as fast as the average PMMX-150 notebook. Also, it provides cost-effective access to the growing selection of MMX-enhanced software—a real concern for those who want to extend the life of their purchase.

The LifeBook is not only quick, it's enjoyable to use as well. The Windows 95 keyboard is comfortable to type on, even though the keys click a little too loudly. We found the pointing device easy to use, too, and especially liked being able to scroll through a document by sliding a finger up and down the touchpad's inside right edge. The LifeBook is well built, with little flex in the case or screen panel.

High performance, good ergonomics, and a solid case put the LifeBook onto our Top 20, but it falls well short of a Best Buy for a couple of reasons. The 12.1-inch dual-scan display is a little dark, and its colors lack vibrancy. We found the contrast control too finicky, and the brightness doesn't go very high. Also, it displays only 256 colors, while most notebook screens today—even dual-scans—offer over 65,000 colors. The upshot: Despite its MMX capability, the LifeBook isn't appropriate for business presentations.

The LifeBook's multimedia features are also a bit underwhelming. You get stereo speakers, but their sound is irritating even for a portable; unless you keep the volume way down, music seems as if it's coming out of a pair of tin cans. At 9.2 pounds, the LifeBook weighs a little more than average for a budget notebook, and it can't run both the internal floppy and CD-ROM drives simultaneously. While the modular bay does not allow hot swapping, you can run the floppy drive externally while the CD-ROM drive occupies the internal bay. Battery life is good at almost 3.75 hours, while the 1.3GB hard drive is standard these days. You'll have to pay extra for applications—the LifeBook lacks a software bundle.

Fujitsu generally does a good job of supporting its notebooks. The LifeBook's user guide is a little out of date (for example, it states that the CPU is a Pentium-120), but it's compact, easy to read, and well supported with diagrams. Numerous caution notes help novices steer clear of time-consuming errors.

Fujitsu's warranty lasts only one year, and the four-day guaranteed turnaround on repairs is longer than we'd like. However, phone support is available around the clock. We don't have enough fax-back survey results to report on Fujitsu's service and system reliability. ■

Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Notebook PCs chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- 5D Technologies 5D 9750 MMX166
- AMS TravelPro 2010 CX166
- ARM TS 9750
- Compaq Armada 1580 DMT
- IBM Thinkpad 380D
- NEC Versa 6050MH
- NEC Versa 6200MX
- Royal Mobile Best Buy MMX200
- Tiger GT 6x86-PR166+
- Transmonde Vibrant 133T
- WinBook XP5 Pro Dual-Scan 1GB

he Nest™ makes installing storage devices so easy, even my dad can do it.

Here's how easy it is to install computer storage devices in the evolutionary Exabyte Eagle™ Nest™ Universal Storage Bay.

1. **Just take the device out of the box (that's the hardest part!)**
2. **Slide it into the Nest bay**
3. **Go to work!**

READY TO USE IN LESS THAN 60 SECONDS!

Nest-ready drives meet a variety of storage needs including:

- **TR-4i Tape Drive** *for up to 8 GB of backup*
- **HD** *for 1.4 GB mobile hard drive storage*
- **LS-120 Super Disk™** *for 120 MB archiving/transferring*
- **Zip™** *for 100 MB archiving/transferring*

Drives from $99 to $299 after rebate*

Nest drives are compatible with Windows® 95 PCs equipped with an internal or external Eagle Nest Universal Storage Bay.

Demand The Nest in the next computer you buy—or have one installed in your current PC! For details, visit your computer dealer or call Exabyte.

Call 1-888-NEST-ITT
Visit us at www.exabyte.com

Exabyte Eagle™

Eagle NEST™ Never Ending Storage Technology

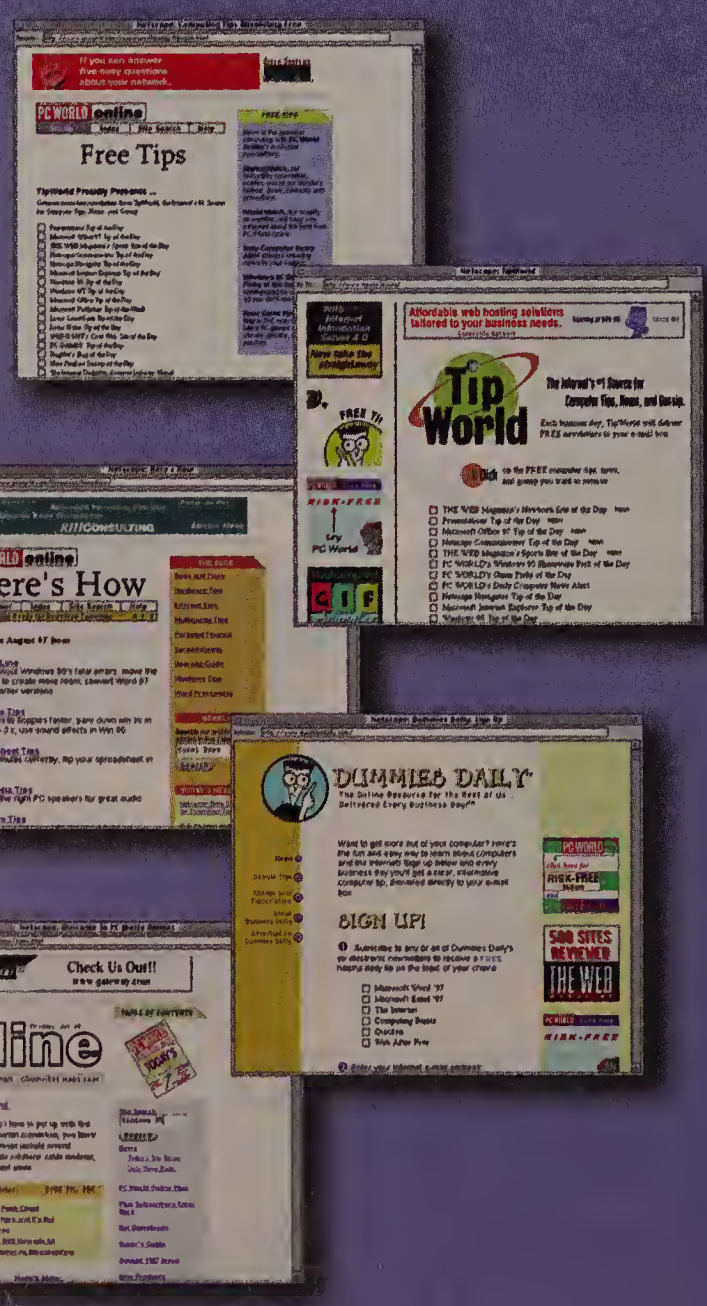
©1997 Exabyte Corporation. Exabyte, Eagle and Nest are all registered trademarks of Exabyte Corporation. All other trade names referenced are property of their respective companies.

*See store for mail-in rebate details

FREE TIPS

- Maximize computing time more efficiently
- Upgrade your skills to the next level
- Troubleshoot before making costly errors

REGISTER NOW TO SUBSCRIBE FOR FREE



"Best selection of **how-to** tips on the Web today"

www.pcworld.com/register

You can take it with you.

Powerful multi-media features, ready to go, anytime, anywhere.

For people that want full-on multimedia power at their fingertips anytime, anywhere, Twinhead presents its exciting new Slimnote 9. A multimedia marvel that features a floppy drive and up to 20X CD-ROM co-existing in the system at the same time.

For over a decade, Twinhead has been manufacturing notebooks for some of the biggest names in the business. Now that same quality and experience is available to you in our own Slimnote Brand. When it comes to mobile computing, Twinhead is truly Two Steps Ahead.™ Plus, all Slimnotes are backed with our exclusive ExpressCare program, providing you with 48-hour service and toll-free support.

- Only 7 pounds, including CD, Floppy & Battery
- USB (Universal Serial Bus)
- 64-bit PCI graphics accelerator with 2Mb of video memory
- 32-bit CardBus and ZV enabled PC Card slot

Call Twinhead today for more information!

Slimnote 9133TZ
Survivor of the 5th Annual PC Computing Torture Test
—April 1997

Two steps ahead™
Twinhead

West – Phone: 800-995-8946 • East – Phone: 800-552-8946 • Phone: 510-492-0828 • Fax: 510-492-0820
www.twinhead.com • Twinhead Corporation • 48295 Fremont Blvd. • Fremont, CA 94538

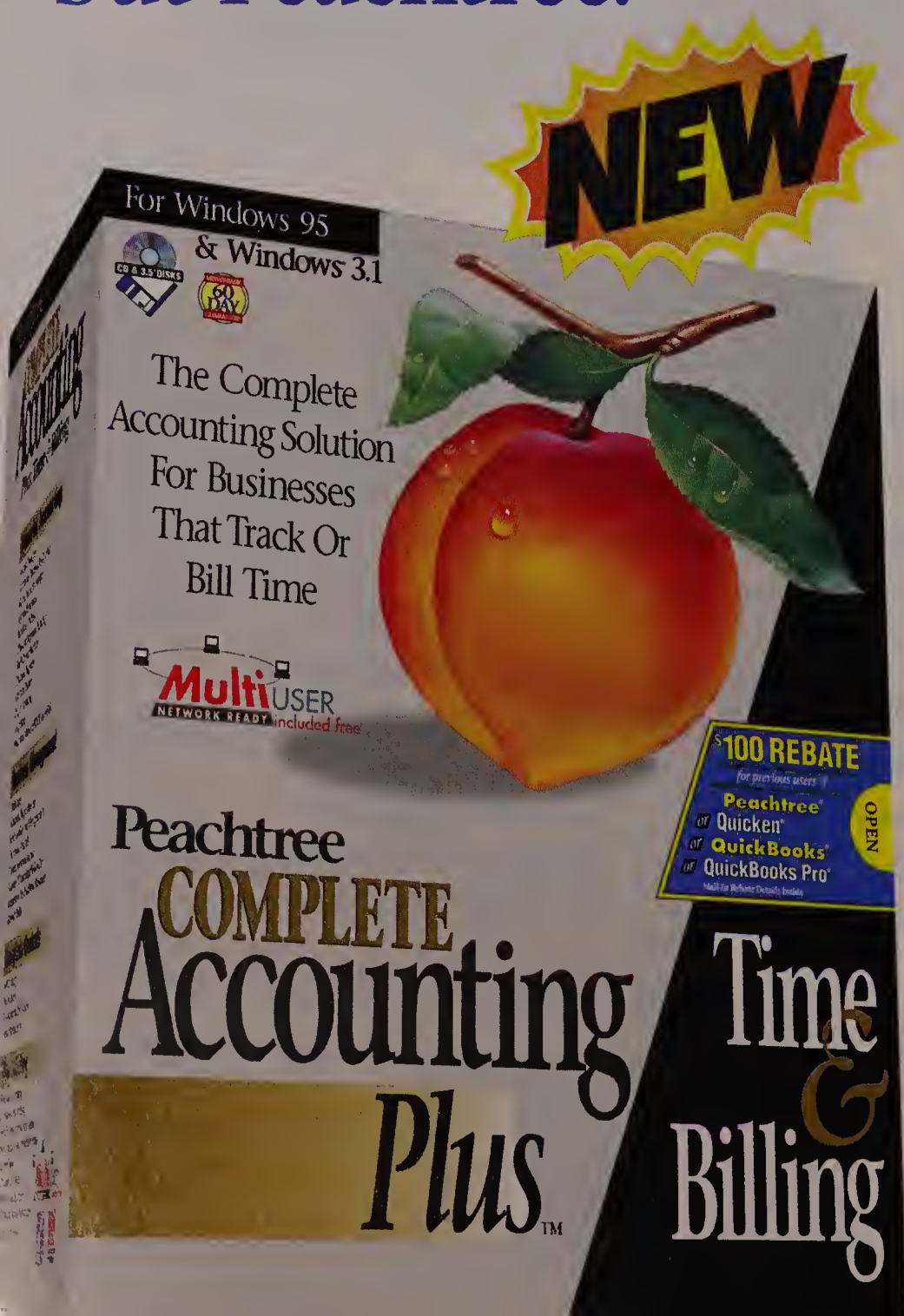
MMX™ intel inside pentium® PROCESSOR

Copyright ©, 1997, Twinhead Corporation, All Rights Reserved. Reproduction without the express written permission of Twinhead Corporation is prohibited. All specifications and configurations subject to change without notice. Twinhead, the Twinhead logo and Slimnote are registered trademarks of Twinhead Corporation. Intel, the Intel Inside Logo, MMX and Pentium are registered trademarks of Intel Corporation. All other trademarks acknowledged.

Circle 240 on reader service card

Small business lives or dies by the numbers.

Don't trust *your* numbers to anyone but Peachtree.



Introducing Peachtree Complete Accounting Plus Time & Billing!

After more than 20 years experience producing accounting software, Peachtree is the most trusted name in the industry.

Just look at our track record. We produced the first accounting software for DOS, Windows,® Macintosh,® and gave you the first multiuser solution at no additional cost.

Now, we introduce the first full-featured, off-the-shelf multiuser accounting solution with the power and flexibility to manage your accounting, *plus* track and bill your time and expenses!

It has it all, **in-depth Inventory, comprehensive Job Costing, and intelligent Business Management tools.** Plus, with great new features like the flexibility of multiple billing rates, and the ability to **track expenses as they occur,** it overpowers anything else on the market today.

Switch Now & Get $100. $100 REBATE

With a suggested street price of only $249, and a **$100 rebate** offer going on NOW for previous users of Peachtree,® Quicken,® Quickbooks,® Quickbooks Pro™ or any other business accounting software, it's the best value around.

So take advantage of this unbelievable offer, and take control of your business today with Peachtree Complete Accounting Plus Time & Billing.™

Peachtree®

To order or for more information, call
1-800-428-9974

COMPUSA CORPORATE The Power Behind American Business. Office DEPOT. BEST BUY STAPLES The Office Superstore

©1997 Peachtree Software, Inc. All rights reserved. Peachtree and the peach device are registered trademarks and Peachtree Complete and Peachtree Complete Plus are trademarks of Peachtree Software, Inc. All other brands are trademarks of their respective companies.

Win a Dell Dimension M200a

Have you ever contacted your PC maker for service and support? Or has your PC been trouble-free? Tell us about it! Fill out and fax in the questionnaire below—even if you have no problems to report, and even if you have responded to this survey before—and we'll enter you in a drawing to win a Dell Dimension M200a, a Pentium MMX-200 PC in this month's Top 20. Send in a separate copy of the survey for each of your PCs.

HOW TO ENTER: FOR BEST RESULTS, PHOTOCOPY THIS PAGE. Fax your completed survey to 415/357-4522. Do NOT fax a cover page. Or mail it to *PC World*, Box 10-SS, c/o 800-SCAN, 543 Howard St., San Francisco, CA 94105-3013. Surveys must be received by October 31.

PRIZE: One entry per person. IDG employees and their families are not eligible. One prize will be awarded through a random drawing. *PC World* will make reasonable efforts to contact winners by telephone and fax. If *PC World* is unable to do so within 30 days of the drawing, a new winner will be selected. No purchase necessary. Void where prohibited by law.

HOW TO FILL OUT THE FORM: Print your name (block capital letters) and your fax number, and fill the circles for each digit of your daytime phone number. Then fill out the questionnaire. AVOID GOING OUTSIDE THE LINES!

LAST, FIRST NAME

FAX NUMBER — —

ZIP CODE

Please fill in your daytime phone number below.

1	○	○	○	○	○	○	○	○	○	○
2	○	○	○	○	○	○	○	○	○	○
3	○	○	○	○	○	○	○	○	○	○
4	○	○	○	○	○	○	○	○	○	○
5	○	○	○	○	○	○	○	○	○	○
6	○	○	○	○	○	○	○	○	○	○
7	○	○	○	○	○	○	○	○	○	○
8	○	○	○	○	○	○	○	○	○	○
9	○	○	○	○	○	○	○	○	○	○
0	○	○	○	○	○	○	○	○	○	○

How did you get this copy of *PC World?*
○ By subscription ○ On the newsstand ○ From someone else

ABOUT YOUR PC

Who is the manufacturer of the PC you use most frequently?

○ Acer ○ Acma ○ ALR ○ Apple ○ AST ○ Austin (IPC) ○ Compaq ○ Compudyne ○ Comtrade ○ CTX ○ CyberMax ○ Dell
○ Diamond ○ Digital (DEC) ○ DTK ○ EPS ○ Epson ○ Everex ○ Fujitsu ○ Future Tech ○ Gateway 2000 ○ Hewlett-Packard ○ HiQ ○ Hitachi
○ Hyundai ○ IBM ○ Insight ○ Intelesys ○ Leading Edge ○ Micro Express ○ Micron ○ Midwest Micro ○ MIS ○ Nat'l Micro ○ NCR ○ NEC
○ Packard Bell ○ Panasonic ○ PerComp ○ Pionex ○ Polywell ○ Quantex ○ Robotech ○ Samsung ○ Sharp ○ Sony ○ Swan ○ Sys Tech.
○ Tangent ○ Texas Instruments ○ Toshiba ○ Twinhead ○ Unisys ○ USA Flex ○ Vektron ○ WinBook ○ Xi ○ Zenith (ZDS) ○ Zenon ○ Other

What size is this PC?
○ Desktop
○ Notebook/laptop

What is the CPU?
○ PowerPC ○ Pentium ○ Pentium Pro ○ Pentium MMX ○ Pentium II ○ Other _____
○ 6x86 ○ 6x86MX ○ MediaGX ○ K5 ○ K6

Where did you buy this PC?
○ Local dealer
○ Mail/phone order
○ Direct from field sales force
○ Membership discount store
○ Computer superstore
○ Home electronics store
○ Retail store
○ Value-added reseller
○ Other

After ordering, how long did it take to get your PC?
○ Less than 1 week
○ 1-2 weeks
○ 3-4 weeks
○ More than 4 weeks

Who set up your PC?
○ Dealer/retailer/VAR
○ Staff computer technician
○ Self or coworker

Where do you use this PC? ○ At home/home office ○ At work ○ Both

WHEN YOU FIRST GOT YOUR PC

When did you buy this PC? (Specify month and year.)

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 92 ○ 93 ○ 94 ○ 95 ○ 96 ○ 97

When you first set up your PC, were any components "dead on arrival" (DOA)?
○ Yes ○ No ○ Don't know

If so, which component was it? (Mark all that apply.)
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive
○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory
○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse
○ Power supply ○ Sound board ○ Other

Did your problem occur only after you added your own hardware or software?
○ Yes ○ No ○ Don't know

Would you buy this brand of PC again?
○ Yes ○ No ○ Not sure

How many times have you had a problem with this PC?
○ No problem ever ○ One ○ Two ○ Three ○ Four ○ More than four

If you have had a problem that you have not reported in a previous survey, please fill out the right column. If you are reporting a DOA for the first time, skip to the service section.

NEW PROBLEM REPORT

Answer for the most recent problem—*other than DOA*—not reported in a prior survey.

When did this problem occur? (Specify month and year.)

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 92 ○ 93 ○ 94 ○ 95 ○ 96 ○ 97

How long after you purchased your PC did the problem occur?
○ Less than 1 month ○ 1-3 months ○ 4-6 months ○ 7-12 months ○ More than 12 months ○ Not sure

Did the problem occur as a result of adding new hardware or software?
○ Yes ○ No ○ Don't know

Did the problem occur under warranty?
○ Yes ○ No ○ Don't know

What was the problem finally identified as? (Mark all that apply.)
○ Faulty component ○ Incorrectly installed software ○ Wrong configuration ○ Faulty peripheral ○ Device conflicts ○ OS problem ○ Other ○ Don't know

If a component failed, which one was it? (Mark all that apply.)
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive
○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory
○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse
○ Power supply ○ Sound board ○ Other

SERVICE

Please use this section to describe the service and support you received for the problem reported above or the DOA reported at left.

Who fixed your PC?
○ Manufacturer
○ Dealer/store where purchased
○ Manufacturer's authorized repair technician
○ Self ○ Other

What types of service and support did you receive? (Mark all that apply.)
○ Phone ○ On site ○ In store
○ System swap ○ Component swap ○ Factory return

If you received phone service, how long were you on hold?
○ Not at all ○ Less than 1 minute ○ 1-2 minutes ○ 3-5 minutes ○ 6-10 minutes ○ 11-20 minutes ○ More than 20 minutes

How long did it take before you talked to the person who finally helped you?
○ Less than 15 minutes ○ 15 minutes-1 hour ○ 2-5 hours ○ 6-10 hours ○ 11-24 hours ○ 1½-2 days ○ 3-5 days ○ 1 week or more

How long did it take to resolve the problem completely?
○ 1-2 days ○ 3-7 days ○ 8-14 days ○ 15-30 days ○ More than 1 month ○ Never resolved ○ Awaiting resolution

Was it resolved to your satisfaction?
○ Yes ○ No

How would you rate the person(s) who helped you?

	Poor		Good		Excellent
Courtesy	○	○	○	○	○
Knowledge	○	○	○	○	○
Follow-through	○	○	○	○	○

Based on the service and support you received, would you buy this brand of PC again?
○ Yes ○ No

On the whole, how satisfied are you with the service and support you received?
○ Not at all ○ ○ Satisfied ○ ○ Extremely satisfied

PLEASE FAX TO 415/357-4522. FOR BEST RESULTS, PHOTOCOPY THIS PAGE.

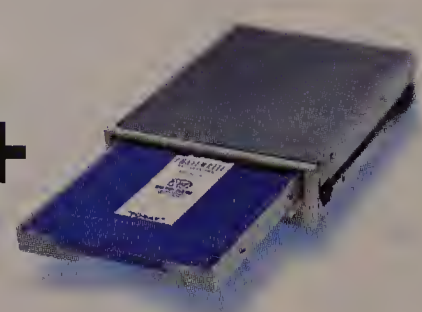
OPTICAL STORAGE SOLUTIONS

Bridge to DVD

Toray's PD is the smartest solution when looking for backup hardware. Why use CD-R media, that only writes ONCE, when you can write, erase, and rewrite to PD media as MANY times as you want?! Toray's PD drive is compatible with PC and Mac based systems and is Windows® 95 and Windows NT READY. The Phasewriter DUAL can now be purchased with SCSI, ATAPI IDE or SCSI to parallel port interface for quick connection to the computer's printer port.

Toray PD Makes Rewritable Storage Easy.

+



=

Reading
Reads CD-ROMs at 6X and 8X speeds.

Writing
Rewritable 500,000 times per cartridge.

Arithmetic
Affordably priced including one 650MB rewritable cartridge.

Windows Magazine
Top 100 Products of the Year

Babbage's
America's Software Headquarters

GLOBAL
COMPUTER SUPPLIES
1-800-845-6225

MICRO CENTE
THE COMPUTER DEPARTMENT ST
1-800-634-347

PHASEWRITER DUAL

'TORAY'
Optical Storage Solutions

For more information visit our web site
www.toray.com or call 1.800.TORAY.
(1.800.867.297

PC WORLD

TOP 10 PRINTERS

	MONOCHROME PERSONAL PRINTERS	Month tested	Street price (7/15/97)	Overall rating	Speed for plain text (ppm)	Speed for full-page graphics (ppm)	Comments	Reader service number
1	HP LaserJet 6Lse 800/752-0900 www.hp.com	Aug 97	$399	80	5	1.8	**FEATURES:** 6-ppm laser. Standard 1MB of RAM, 600-by-600-dpi maximum resolution, 100 sheets input, 100 output. **PRO/CON:** Excellent print quality and paper handling, faster text speed than its predecessor the LaserJet 5L Xtra; still slowest on the monochrome chart, software bundle is not very useful.	737
2	Brother HL-720 800/827-6843 www.brother.com	June 97	$299	80	5.5	2.6	**FEATURES:** 6-ppm laser. Standard 512K of RAM, 600-by-600-dpi maximum resolution, 200 sheets input, 100 output. **PRO/CON:** Low price, fast graphics speed, good print quality, 200-sheet input tray among best on chart; not as easy to use as the HP LaserJet 6Lse, output tray takes up a lot of space.	738
3	NEC SuperScript 660plus 800/632-4636 www.nec.com	June 97	$299	79	5.1	2.5	**FEATURES:** 6-ppm laser. Standard 256K of RAM, 600-by-600-dpi maximum resolution, 150 sheets input, 100 output. **PRO/CON:** $50 off already low-price laser, good print quality and speed, includes parallel cable and two-year warranty; paper trays are flimsy, two-piece toner cartridge is hard to install.	739
4	NEC SuperScript 860 800/632-4636 www.nec.com	June 97	$399	79	7	2.4	**FEATURES:** 8-ppm laser. Standard 1MB of RAM, 600-by-600-dpi maximum resolution, 200 sheets input, 50 output. **PRO/CON:** Blistering text speed, easy controls for creating booklets and more, two-year warranty; gray-scale graphics are blotchy, pages collate in reverse order.	740
5	Panasonic KX-P6500 800/742-8086 www.panasonic.com	June 97	$399	78	5.6	2.3	**FEATURES:** 6-ppm laser. Standard 512K of RAM, 2400-by-600-dpi maximum resolution, 100 sheets input, 50 output. **PRO/CON:** Text and gray-scale print quality are very good thanks to the 2400-dpi resolution enhancement, tower design saves space; on-screen help lacks detail.	741
	COLOR PERSONAL PRINTERS							
1	Canon BJC-4300 800/848-4123 www.ccsi.canon.com	NEW	$199	83	1.9	0.3	**FEATURES:** 5-ppm monochrome/2-ppm color ink jet. 720-by-360-dpi maximum resolution, 100 sheets input and output. **PRO/CON:** Low price, prints fine on plain paper, very nice results on ink jet stock, great manual and software, easy to install and use; second-slowest printer on chart.	742
2	Epson Stylus Color 600 800/463-7766 www.epson.com	June 97	$299	81	2	0.6	**FEATURES:** 6-ppm monochrome/4-ppm color ink jet. 1440-by-720-dpi maximum resolution, 100 sheets input, 30 output. **PRO/CON:** Near-photo quality without special inks, easy installation, two-year warranty; mediocre text quality on plain paper, no manual feed slot for envelopes.	–
3	HP DeskJet 694C 800/752-0900 www.hp.com	June 97	$299	80	2.2	0.3	**FEATURES:** 3-ppm monochrome/0.8-ppm color ink jet. 600-by-600-dpi maximum resolution, 100 sheets input, 50 output, banner printing. **PRO/CON:** Easy to use, prints well on plain paper, software includes home and small office applications; printing photos requires special ink and paper.	743
4	HP DeskJet 820Cse 800/752-0900 www.hp.com	June 97	$299	79	4	0.3	**FEATURES:** 5-ppm monochrome/1.5-ppm color ink jet. 600-by-600-dpi maximum resolution, 150 sheets input, 50 output. **PRO/CON:** Near-laser text quality and speed, easy to use, includes Microsoft's excellent Publisher 97 desktop publishing app; color graphics look fine except for photos.	744
5	HP DeskJet 672C 800/752-0900 www.hp.com	Aug 97	$199	79	1.7	0.3	**FEATURES:** 2.5-ppm monochrome/0.8-ppm color ink jet. 600-by-600-dpi maximum resolution, 100 sheets input, 50 output. **PRO/CON:** Low price, prints well on plain paper, output tray lets pages dry before they fall, excellent manual; color quality is a little grainy, external power supply is bulky.	745

Best Buy For expanded reviews, visit www.pcworld.com/t10printers. Windows 95-certified Plug and Play All products: 909

HOW WE TEST The overall rating for both monochrome and color personal printers is based on print quality (25 percent), price (25 percent), features (15 percent), speed (10 percent), service and support (10 percent), and ease of use (15 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

A SLEW OF NEW COLOR INK JETS from Canon—ranging from a designer portable to a high-end model the company claims breaks new ground in plain-paper printing—is hitting store shelves. This month we tested four models in Canon's line: the portable $299 BJC-80; the high-end $449 BJC-7000, which primes plain paper with a coating to reduce bleeding; the $179 BJC-250, a bargain model that replaces the BJC-240; and ▶

the $199 BJC-4300, which replaces the BJC-4200 Photo that was number three on our color chart in August.

The best deal of the bunch is the BJC-4300, our new number one color Best Buy. It's easy to operate, produces nice prints, and is $100 cheaper than the number two Epson Stylus Color 600, which it knocks out of first place. Canon swung hard but struck out with the other three models we tested, due to poor print quality, slow speed, or high price.

Three other personal printers we reviewed this month did not fare well either. Lexmark's $399 Color Jetprinter 7000 and $449 Optra E+ monochrome laser are much too expensive for what they offer. We also looked at the DP-560, a new low-cost monochrome laser from market newcomer Mita. The DP-560 prints nice text, but this printer was only about half as fast as other 6-ppm lasers, which ruined its chances for making this month's chart. At press time we retested the DP-560 with new drivers, which sped it up dramatically—it now competes with some of the fastest monochrome lasers we've tested. Look for an updated review of this promising $279 printer in our December issue.

WINNING CANON

THE BJC-4300 isn't the fastest color personal printer you can buy. It prints color graphics at three-tenths of a page a minute—about average—and text at a little less than 2 ppm, making it the second-slowest model on the color chart. But this new Canon ink jet is still a terrific deal. At $199, it ties with Hewlett-Packard's number five DeskJet 672C for the lowest price on the chart, and it produces much nicer results. On plain paper, colors and text look better than the output from many other ink jets, including the DeskJet. On ink jet paper, gray-scale images, text, and color photos are especially attractive. The printer comes with an excellent setup guide, manual, and on-screen help, plus Canon Creative 3—a lavish, two-disc SOHO package that includes photo editing software and a greeting card creation program.

Tired of going without a printer on business trips? You might want to check out the $299 Canon BJC-80, a battery-run portable ink jet that fits neatly in a shoulder bag along with your notebook computer. The stylishly jet-black, 3.1-pound BJC-80 looks good and comes with an infrared port, which lets you print from any IR-equipped PC without cables. Just remember that you're paying for portability, not great speed or print quality. Like most portables (and like its nonmobile BJC-4300 sibling), the BJC-80 is on the slow side: It prints graphics at three-tenths of a page per minute and text at less than 2 ppm.

The BJC-80's text looks pretty nice, but lines come out jagged, regardless of the paper used. To get good color, you'll need to buy paper specifically intended for use with ink jet printers. These drawbacks, and the BJC-80's tiny cartridges (which poop out after only about 60 black-and-white pages), are what kept this portable off our chart.

CANON'S NEW BJC-4300 is a little slow, but its price, print quality, and friendly design make it our top color buy.

FAILED GIMMICK

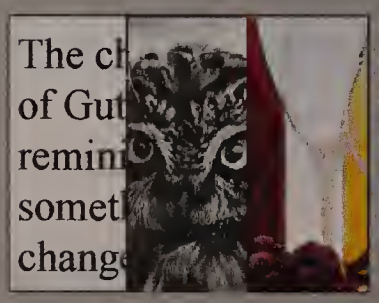
FOR THE TOP of its ink jet line, Canon developed an interesting—if not entirely successful—idea to improve plain-paper print quality. Before spraying inks, the BJC-7000 puts down a layer of clear, ink-solvent material intended to reduce bleeding, a common ink jet problem. However, it didn't seem to make much of a difference in our tests. On ink jet paper the BJC-7000's print quality is impressive, even spectacular, especially with text and color graphics. But on plain paper its results are only marginally better than with other ink jets. The $449 BJC-7000 is also very slow compared to other models in its price range: It chugs through text at only 2.3 ppm and graphics at 0.3 ppm.

At $179, the BJC-250 is at the bottom of Canon's new line, and it shows. It's slower than any of the color printers that made the chart, and it can take only one ink cartridge at a time—a design that most manufacturers are abandoning because it's inconvenient and results in greenish-looking black text in color documents. For only $20 more, you can get the Best Buy Canon BJC-4300, whose single-cartridge design includes a separate ink tank for true black text.

—Dan Littman ■

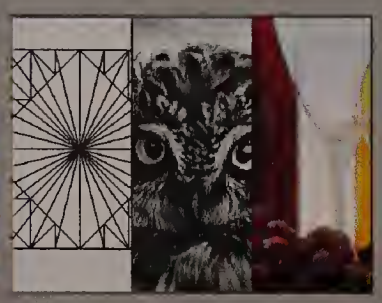
PRINT QUALITY SAMPLES

Canons Run the Gamut in Print Quality



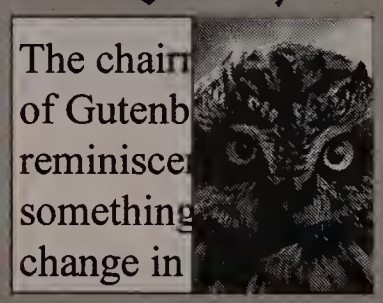
CANON BJC-4300

Our new color Best Buy, the $199 BJC-4300, does fine on plain paper, but photos and gray-scale images really shine on ink jet stock (shown here).



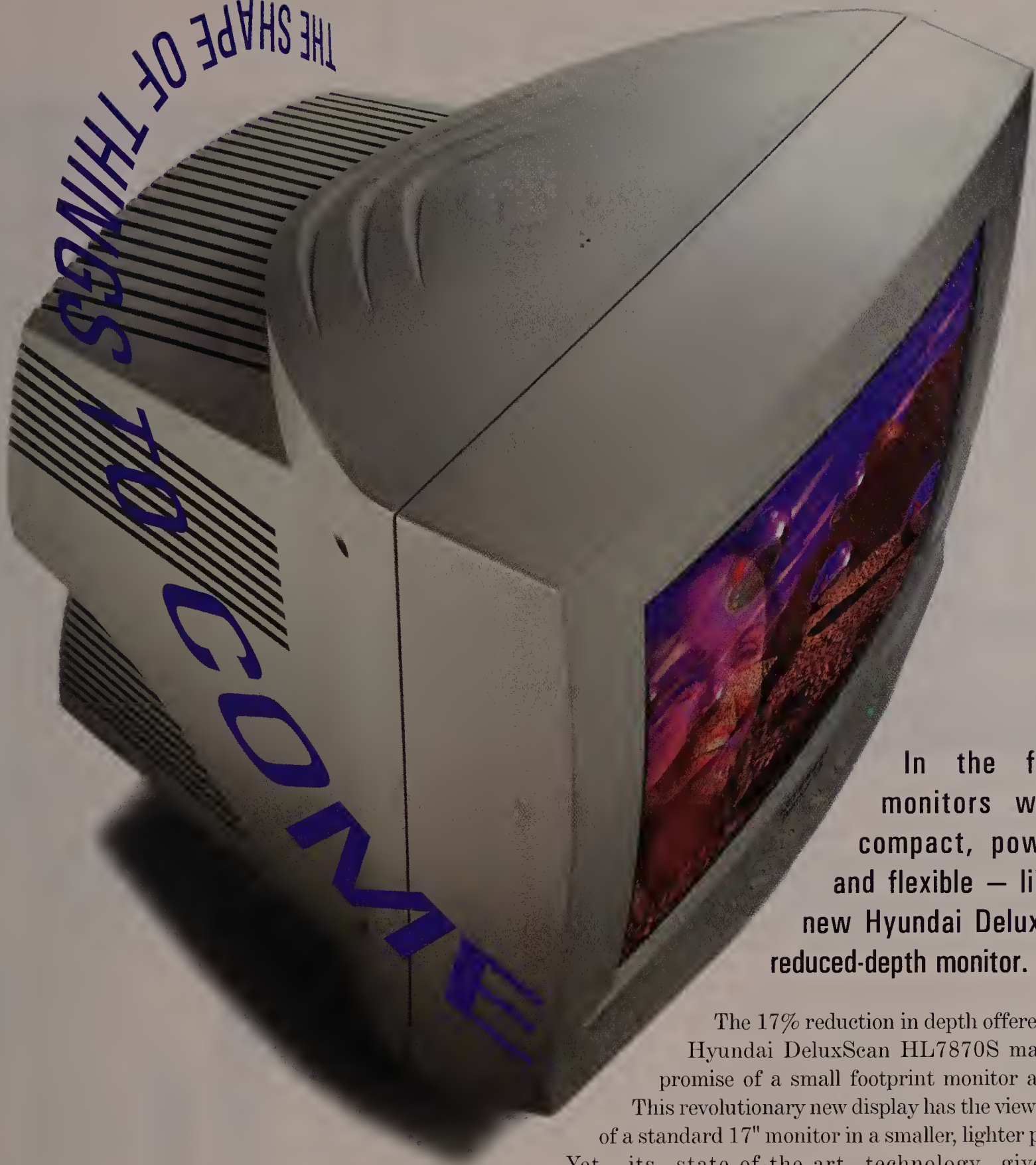
CANON BJC-80

Canon's new $299 portable needs ink jet paper to print nice gray-scale images and color photos. But lines come out jagged no matter what type of paper you use.



LEXMARK OPTRA E+

You can find cheaper, better monochrome printers than this new $449 laser from Lexmark. It prints crisp text, but gray-scale images tend to come out too dark.



In the future, monitors will be compact, powerful, and flexible — like the new Hyundai DeluxScan® reduced-depth monitor.

The 17% reduction in depth offered by the Hyundai DeluxScan HL7870S makes the promise of a small footprint monitor a reality. This revolutionary new display has the viewing area of a standard 17" monitor in a smaller, lighter package. Yet, its state-of-the-art technology gives you uncompromising performance and features, including 1280 x 1024 resolution, .27 dot pitch, and Advanced Digital On-Screen Controls — all at prices comparable with today's classic 17" monitors.

Experience the future with a new Hyundai DeluxScan reduced-depth monitor. ***It's the shape of things to come.***

For more information on the DeluxScan reduced-depth monitor, or any of the products in the DeluxScan monitor family, visit the Hyundai Web site at www.hea.com or call 1-800-568-0060

A 17" monitor with the footprint of a 14" monitor.

Model	CRT/Viewable	Max Resolution	Controls	Dot Pitch	ESP*
14S	14"/13.2"	1024x768	Digital	.28	$189
15B	15"/13.7"	1024x768	Digital	.28	$249
17MS	17"/15.7"	1024x768	Digital	.39	$389
15G+	15"/13.7"	1280x1024	Digital On-Screen	.28	$299
17B+	17"/15.7"	1280x1024	Digital On-Screen	.28	$499
17S	17"/15.7"	1280x1024	Digital On-Screen	.27	$599

*Estimated street price 6/97. Dealer prices may vary. Does not include shipping and handling.

(800) 568-0060

www.hea.com

HYUNDAI

DeluxScan® Monitors

Circle 110 on reader service card

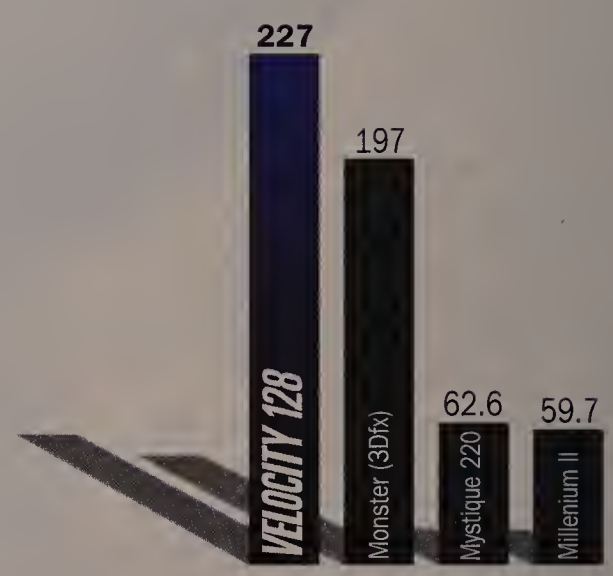
Speed and power are
about technology
not hype

VELOCITY 128™

- 128-bit 2D/3D multimedia accelerator
- 4MB of 100MHz SGRAM memory
- 1.6 Gigabyte/sec data transfer rate
- 230MHz integrated RAMDAC
- Video out for connection to TV's
- 5 GFLOP setup & rendering engine
- 100 Million rendered pixel/sec fill rate
- 15 Billion pixel operations/sec
- DMA "scatter-gather" bus mastering
- Vertex and texture caching
- X and Y sub-pixel interpolation
- Windows 95 and NT compatible
- Direct3D and OpenGL support
- VESA DDC-2B monitor support
- VESA VBE 3.0 BIOS Support
- Lifetime Warranty

Find STB products at Best Buy, CompUSA, Computer City, CDW, Computability, PC Connection, and in systems from Acer, Compaq, Dell, Gateway 2000, IBM and others

Copyright 1997 STB Systems, Inc. All rights reserved. All trade names referenced are the trademarks, service marks, or registered trademarks of their respective holders. †3D WinBench 97 1.0 tests conducted on a Gateway 2000 PII-266 MMX, PCI 2.0 Bus, 512K cache, 64MB SDRAM, 640x480x16 bit bit, at 75Hz refresh without GDI bypass as required for Microsoft certification. Memory and driver versions: STB VELOCITY 128™ (4 MB) Beta2 v1.0 6/30/97, Diamond Monster 3Dfx (4MB) 4.03.00.2108 4/16/97, Matrox Millenium II (4MB) 4.03.00.3600 5/12/97, Matrox Mystique 220 Business (4MB) 4.03.00.3600 5/12/97. Specifications subject to change without notice.



3D Winbench '97 Performance†

INVENTING THE FUTURE OF SPEED

www.stb.com

STB Systems, Inc.

Circle 210 on reader service card

PC WORLD

TOP 10 MONITORS

	15-INCH MONITORS	Month tested	Street price (7/20/97)	Overall rating	Quality of text/graphics	Comments	Reader service number
1	Panasonic PanaSync Pro P15 800/742-8086 www.panasonic.com/alive	retested this month	$349	83	very good/ excellent	**FEATURES:** 14-inch viewable area, .27mm dot pitch tube, up to 75-Hz refresh rate,[1] Plug and Play ready,[2] three-year warranty, 24-hour toll-free tech support. **PRO/CON:** Crisp text and best color graphics with unusually clear detail, large viewable area, easy-to-adjust on-screen controls; lacks a tilt control, generic appearance.	619
2	Mitsubishi Diamond Scan 15VX 800/843-2515 www.mitsubishi-display.com	retested this month	$350	83	very good/ very good	**FEATURES:** 13.8-inch viewable area, .28mm dot pitch tube, up to 100-Hz refresh rate,[1] Plug and Play ready,[2] image correction utility, three-year warranty, 8.5-hour weekday toll-free support. **PRO/CON:** Improved antireflective screen with terrific text and detailed graphics, ample plain-English menus; no tilt control.	620
3	Dell UltraScan 800HS 800/289-3355 www.dell.com	retested this month	$399	81	very good/ very good	**FEATURES:** 13.7-inch viewable area, .25mm stripe pitch Trinitron tube, up to 110-Hz refresh rate,[1] Plug and Play ready,[2] TCO'95 compliant, 24-hour toll-free support. **PRO/CON:** Fine image quality, easily adjustable, drop-down door prevents accidental changes; brief one-year warranty, faint line across screen, expensive.	621
4	Nokia Multigraph 449Xa 800/296-6542 www.nokia.com	retested this month	$399	80	very good/ good	**FEATURES:** 13.6-inch viewable area, .25mm stripe pitch Trinitron tube, up to 100-Hz refresh rate,[1] Plug and Play ready,[2] image adjustment utility, three-year warranty, 12-hour weekday toll-free support. **PRO/CON:** Very sharp text, speakers, handsome styling, very adjustable; relatively small viewable area, expensive.	622
5	Hitachi SuperScan Pro 500 800/441-4832 www.nsa-hitachi.com	retested this month	$349	80	good/ very good	**FEATURES:** 13.6-inch viewable area, .28mm dot pitch tube, up to 100-Hz refresh rate,[1] Plug and Play ready,[2] three-year warranty, 8-hour weekday toll-free support. **PRO/CON:** Good text, accurate color, realistic graphics; short support hours, fairly small viewable area, tedious button pressing to navigate on-screen menus.	623
6	Gateway 2000 CrystalScan 500 800/846-2000 www.gateway.com	retested this month	$305	80	very good/ good	**FEATURES:** 13.8-inch viewable area, .28mm dot pitch tube, up to 75-Hz refresh rate,[1] Plug and Play ready,[2] three-year warranty, 24-hour toll-free support. **PRO/CON:** $40 price drop, crisp text, liberal assortment of controls with door to protect against accidental changes; hard to tell what control buttons do in different modes.	624
7	Princeton Graphics Systems E050 800/747-6249 www.prgr.com	retested this month	$269	80	very good/ good	**FEATURES:** 13.8-inch viewable area, .28mm dot pitch tube, up to 85-Hz refresh rate,[1] Plug and Play ready,[2] three-year warranty, 24-hour toll-free support. **PRO/CON:** Great price, very sharp contemporary styling, well-defined text, ample assortment of controls; using basic controls takes too much button pushing.	625
8	Hansol 500P 888/426-7651 www.hansol-us.com	NEW	$269	79	good/ good	**FEATURES:** 13.8-inch viewable area, .28mm dot pitch tube, up to 85-Hz refresh rate,[1] Plug and Play ready,[2] three-year warranty, 8-hour weekday toll-free support. **PRO/CON:** Outstanding price, modern good looks, easy thumbwheel contrast/brightness adjuster; no on-screen display for fairly limited set of advanced controls.	626
9	Smile CB-6536SL 800/876-4532 www.smilekfc.com	NEW	$298	78	good/ good	**FEATURES:** 13.6-inch viewable area, .25mm CromaClear tube, up to 90-Hz refresh rate,[1] Plug and Play ready,[2] TCO'92 compliant, three-year warranty, 9-hour weekday toll-free support. **PRO/CON:** Good price, clearly marked controls, ample menus; controls have no gauges to show adjustment level, relatively small viewable area.	627
10	ADI MicroScan 4P 800/977-3336 www.adiusa.com	NEW	$339	78	good/ good	**FEATURES:** 13.8-inch viewable area, .28mm dot pitch tube, up to 85-Hz refresh rate,[1] Plug and Play ready,[2] 3.5-year warranty, 9-hour toll-free tech support. **PRO/CON:** Attractively sculpted front panel, controls among the best we've seen—easy, extensive, finely calibrated, intuitive; least-impressive graphics of any Top 10 monitor.	628

Best Buy For expanded reviews, visit www.pcworld.com/t10monitors. All products: 903

[1] Highest refresh rate at 800 by 600 resolution. [2] Plug and Play monitors and graphics cards can communicate bidirectionally. However, Windows 95 does not fully utilize monitor Plug and Play.

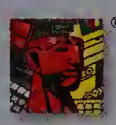
HOW WE TEST Ten judges rate a monitor's text and graphics quality. We evaluate each unit on how well it displays typical business letters, a newsletter, spreadsheets, Web pages, and scanned images. The overall rating is based on text and graphics quality (25 percent each), features and ease of use (25 percent), price (20 percent), and service and support (5 percent). The best possible overall rating is 100. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

THIS MONTH our "most improved" award goes to Mitsubishi's Diamond Scan 15VX. With a new screen coating and other advances, it jumped from tenth to second place. Our more exacting tests also agreed with Panasonic's top-ranked PanaSync Pro P15. Former Best Buys from Dell and Nokia, hurt by high prices and lower scores on the new tests, dropped a bit. And some August contenders fell short, displaced by affordable newcomers. ■

YOUR 486 ISN'T OVER THE HILL.

IT JUST NEEDS SOMETHING TO GET THE GRAY OUT.

SO YOUR 486 IS MOVING SLOWER



® than usual. Even the simplest tasks have become agonizing. Sounds like a job for the Kingston® TurboChip™ 133. Benchmarks show that TurboChip increases system performance for most 486-based SX and DX systems by up to 250 percent.† That's a performance boost equal to Pentium® 75 processing power. But why stop there? To further extend the life of your trusty 486, just add 16MB of Kingston memory. More good news: TurboChip 133 has been field-tested and Windows NT® approved. To learn more about this ultimate upgrade solution, call (800) 588-5517. Or visit our Web site at www.kingston.com/ad.

www.kingston.com/ad

GET A TURBOCHIP 133 AND 16MB OF KINGSTON MEMORY FOR AROUND $200.*

Kingston® TECHNOLOGY

COMPUTING WITHOUT LIMITS.™

*Based on average street price as of August 1, 1997 for TurboChip and 16MB of memory. Prices subject to change. †Actual performance gains depending on environment and system configuration. Kingston Technology Company, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699. © 1997 Kingston Technology Company. All rights reserved. Computing Without Limits and TurboChip are trademarks of Kingston Technology Company. All other trademarks and registered trademarks are the property of their respective owners.

Circle 128 on reader service card

PC WORLD

TOP 10 GRAPHICS BOARDS

	GRAPHICS BOARDS	Month tested	Street price (6/2/97)	Overall rating	PC WorldBench graphics score	3D score	Multimedia score	Comments	Reader service number
1	ATI 3D Pro Turbo PC2TV 905/882-2600 www.atitech.ca	retested this month	$219	98	189 very good	good	outstanding	**FEATURES:** 8MB of SGRAM, 220-MHz RAMDAC, ATI Rage II chip, bundled 3D modeling, image editing, and VRML software. **PRO/CON:** Terrific multimedia performance, nice 3D, connects to TV; expensive, mediocre video playback, no toll-free support.	601
2	Diamond Stealth 3D 3000 800/468-5846 www.diamondmm.com	retested this month	$170	96	191 outstanding	adequate	very good	**FEATURES:** 4MB of VRAM, 220-MHz RAMDAC, S3 Virge/VX chip, bundled 3D game, 3D design software, and multimedia encyclopedia. **PRO/CON:** Fast in 2D, great in two of three 3D games; driver bug in one game, no toll-free support.	602
3	ATI 3D Xpression+ PC2TV 905/882-2600 www.atitech.com	retested this month	$129	95	190 outstanding	adequate	adequate	**FEATURES:** 4MB of SGRAM, 170-MHz RAMDAC, ATI Rage II chip, bundled 3D games, 3D modeling, image editing, and VRML software. **PRO/CON:** Good in 2D and 3D, nice bargain, connects to TV; mediocre video playback, no toll-free support.	603
4	STB Nitro 3D 888/234-8750 www.stb.com	retested this month	$149	94	190 outstanding	adequate	adequate	**FEATURES:** 4MB of EDO DRAM, 170-MHz RAMDAC, S3 Virge/GX chip, bundled 3D games. **PRO/CON:** Affordable, fast 2D, toll-free support, lifetime warranty, excellent AVI video playback; below-average 3D game play overall, driver bug in one game.	604
5	Diamond Stealth 3D 2000 Pro 800/468-5846 www.diamondmm.com	retested this month	$135	94	191 outstanding	adequate	very good	**FEATURES:** 4MB of EDO DRAM, 170-MHz RAMDAC, S3 Virge/DX chip, bundled 3D game, photo-editing software, and multimedia encyclopedia. **PRO/CON:** Great 2D performance, inexpensive, connects to TV; no toll-free support, driver bug in one game.	605
6	Hercules Terminator 3D/DX 800/532-0600 www.hercules.com	retested this month	$149	92	189 very good	adequate	very good	**FEATURES:** 4MB of EDO DRAM, 170-MHz RAMDAC, S3 Virge/DX chip, bundled 3D games. **PRO/CON:** Good price, quick in multimedia programs, excellent AVI video playback, toll-free support; subpar 3D quality overall, driver bug in one game.	606
7	STB Velocity 3D 888/234-8750 www.stb.com	retested this month	$199	91	189 very good	poor	adequate	**FEATURES:** 4MB of EDO VRAM, 220-MHz RAMDAC, S3 Virge/VX chip, upgradable to 8MB. **PRO/CON:** Good for graphics professionals, toll-free support, lifetime warranty; poor for 3D games overall, driver bug in one game, choppy video playback.	607
8	Matrox Mystique 220 800/361-1408 www.matrox.com/mga	retested this month	$179	89	190 outstanding	adequate	good	**FEATURES:** 4MB of SGRAM, 220-MHz RAMDAC, Matrox MGA-1164SG chip, bundled 3D games and VRML software, upgradable to 8MB. **PRO/CON:** Fast all around, easy to install and use; Direct3D games look bad, no toll-free or weekend support.	608
9	Hercules Stingray 128/3D 800/532-0600 www.hercules.com	retested this month	$249	88	184 very good	very good	poor	**FEATURES:** 4MB of EDO DRAM, 180-MHz RAMDAC, Alliance ProMotion-AT3D chip, 3Dfx Voodoo Rush 3D chip set, bundled games. **PRO/CON:** Terrific 3D quality, toll-free technical support; pricey, lackadaisical 2D performance.	609
10	Number NineFX Reality 772 800/438-6463 www.nine.com	retested this month	$279	87	190 outstanding	poor	very good	**FEATURES:** 4MB of VRAM, 220-MHz RAMDAC, S3 Virge/VX chip. **PRO/CON:** Fast in 2D and multimedia programs, excellent AVI video playback; pricey, poor in 3D games overall, driver bug in one game, no toll-free or weekend support.	610

Best Buy For expanded reviews, visit www.pcworld.com/t10graphics. All products: 901

HOW WE TEST We tested PCI boards under Windows 95 with PC WorldBench 1.0 at 800 by 600 and 16.8 million colors, at 1024 by 768 and 65,536 colors (reported here), and at 1280 by 1024 and 65,536 colors. The 3D score is based on frame rates in our VRML and 3D game tests, plus subjective ratings in three games: Microsoft's Monster Truck Madness, Eidos Interactive's Terricide, and Fox Interactive's Independence Day. The multimedia score is based on frame rates in our Macromedia Director and AVI playback tests, plus timed scores in our PowerPoint multimedia presentation tests. Boards were tested in a Dell Dimension XPS P133c with 32MB of EDO DRAM and 256K of pipeline-burst secondary cache. The overall rating is based on performance (40 percent), features (30 percent), price (20 percent), and support policies (10 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

NEW 3D AND MULTIMEDIA tests shuffled the order of the chart this month, with ATI's 3D Pro Turbo PC2TV claiming top spot. This $219 board is a little pricey, but it has the best balance of 2D, 3D, and multimedia performance we found. The number two $170 Diamond Stealth 3D 3000 is another sturdy all-around board, though it had a bug in one game. For details, see "2D and 3D Graphics Boards: You Can't Always Get What You Want." ■

What 22 years in the monitor business gets you.

Premium Aperture Grille Monitor *technology. At a shadow mask monitor price.*

0.25mm Dot Pitch *for a brighter, clearer, tighter image.*

Full ***16.0" viewing area*** *shows more of what's on your screen*

Sharp, crisp, flicker- free ***77Hz resolution at 1280 x 1024***

Three-Year Warranty *for CRT parts & labor, of course.*

One-touch On-Screen Display *with digital controls.*

Used to be, there were two ways to get the sharper picture, richer colors and enhanced clarity of Aperture Grille technology. You could buy a high-end professional monitor from a company like NEC, Sony or Mitsubishi, with all the high-end features and a price to match. Or you could spend a lot less. And end up with a stripped-down imitation. Fortunately, that was then.

Now, of course, there's TeleVideo, the company that's been pioneering high-end technology for ordinary folks and quietly selling high-performance monitors at very reasonable prices since 1975. We've got a complete line of large-screen Aperture Grille monitors, including the flagship SVP260 pictured above. All with features comparable to (or even superior to) the Big Names, but at prices you can live with.

So how do we do it? Call **1-800-835-3228** to find out. Or visit us at **www.televideoinc.com**. But for now, let's just say that when you've been in the monitor business since bell-bottoms were cool, you learn a few things.

TeleVideo: good monitors, reasonable prices. (See for yourself.)

	Model	Aperture Grille (mm)	Refresh Rate (Hz) @1600x1200	H-Scan (KHZ)	MSRP ($)
17"*	**TeleVideo SVP260**	**0.25**	**66**	**24-82**	**779**
	Mitsubishi 87TXM	0.25	66	30-86	829
	Sony 17sell	0.25	60	30-85	899
	ViewSonic PT770	0.25	66	24-82	799
17"*	**TeleVideo SVP270**	**0.25**	**75**	**30-95**	**889**
	Eizo-Nano TX-C7S	0.25	73	30-92	1125
	Nokia 447Xi	0.25	n/a	31-92	899
	Sony 17sell	0.25	60	30-85	899
21"*	**TeleVideo SVP350**	**0.28**	**85**	**30-107**	**1649**
	Mitsubishi 91TXM	0.28	75	30-95	1649
	NEC P1150	0.28	75	31-94	1599
	IIYAMA Pro 21	0.30	75	30-94	1699

***Diagonal viewable area may vary.**

TeleVideo®

Over 20 Years of Display Technology

©1997 TeleVideo, Inc. The TeleVideo name and logo are registered trademarks and SuperView is a trademark of TeleVideo. All other names are the service mark, trademark or registered trademarks of their respective owners. TeleVideo reserves the right to change specifications without notice.

Circle 222 on reader service card

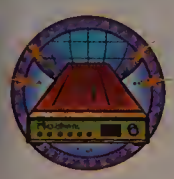
PC WORLD

TOP 10 MODEMS

	33.6-KBPS EXTERNAL MODEMS	Month tested	Street price (7/15/97)	Overall rating	Average transfer times per MB (min:sec)	Comments	Reader service number
1	3Com/U.S. Robotics Courier V.Everything 33.6 800/342-5877 www.3com.com	Jan 97	$225	80	2:42	**FEATURES:** FlashROM, distinctive ring, 230.4-kbps PC-to-modem speed, QuickLink II fax/data software, password protection, call-back security. **PRO/CON:** Above-average performer, loaded with features, manual volume control, great documentation; expensive, takes up a lot of room.	637
2	Diamond Multimedia SupraSonic 336 V+ 800/727-8772 www.diamondmm.com	Aug 97	$199	80	2:44	**FEATURES:** FlashROM, distinctive ring, 115.2-kbps PC-to-modem speed, Caller ID, voice-enabled, serial cable, headphones, microphone, COMit voice/fax/data software. **PRO/CON:** Loaded with features, technical support available on Saturdays, SupraFax voiceless sibling also a good buy; expensive.	638
3	Zoom Fax/Modem V.34X Plus 800/631-3116 www.zoomtel.com	Aug 97	$99	79	2:52	**FEATURES:** MNP-10EC error control, 115.2-kbps PC-to-modem speed, serial cable, distinctive ring, DOS/WinFax Lite fax/data software. **PRO/CON:** Least expensive modem on chart after fourth-place NewCom, easy-to-follow documentation, seven-year warranty; slow, no security features.	639
4	NewCom 33600efx 800/563-9266 www.newcominc.com	Mar 97	$85	79	2:48	**FEATURES:** V.FC, MNP-10 error control, 115.2-kbps PC-to-modem speed, QuickLink II fax/data software. **PRO/CON:** Lowest-price modem on chart, toll-free technical support; below-average performance, has only the basics for features, documentation could use a lot of improvement.	640
5	Logicode Quicktel II-E With LED Array 800/735-6442 www.logicode.com	NEW	$130	79	2:52	**FEATURES:** Novel curved design, voice mail, 115.2-kbps PC-to-modem speed, speakerphone, DSVD, built-in microphone, QuickLink II Message Center software, Intel ProShare software. **PRO/CON:** Inexpensive for a full-featured modem, easy-to-follow documentation; slow, supplied book on the Net is outdated and too technical.	641
6	Microcom OfficePorte Voice 33.6 800/822-8224 www.microcom.com	May 97	$130	78	2:44	**FEATURES:** MNP-10EC error control, 115.2-kbps PC-to-modem speed, voice mail, distinctive ring, Focal Point fax/data software. **PRO/CON:** Good price on voice mail-equipped modem with built-in microphone, analog simultaneous voice/data; not upgradable, heavy-handed technical documentation.	642
7	Practical Peripherals 33.6 MiniTower Internet Kit 800/377-4377 www.practical.com	May 97	$119	78	2:40	**FEATURES:** QuickLink II fax/data software, 115.2-kbps PC-to-modem speed, McAfee VirusScan, and Quarterdeck WebTalk. **PRO/CON:** Great price, fantastic support policies (including lifetime warranty and weekend technical support); lacks security and upgrade features, documentation is too technical.	643
	56-KBPS EXTERNAL MODEMS						
1	3Com/U.S. Robotics Sportster 56K Faxmodem External Model 1786 800/342-5877 www.3com.com	NEW	$219	79	2:44/2:56 [1]	**FEATURES:** Uses x2 protocol, 115.2-kbps PC-to-modem speed, manual volume control, RapidComm fax/data software. **PRO/CON:** Very good documentation, company guarantees free upgrade to the final 56K standard even if that means swapping the modem, big software bundle; a little pricey.	644
2	Diamond Multimedia SupraExpress 56e 800/727-8772 www.diamondmm.com	NEW	$170	77	2:39/3:05 [1]	**FEATURES:** Uses K56flex protocol, V.FC, 115.2-kbps PC-to-modem speed, V.80 videoconferencing protocol, serial cable, FaxTalk fax/data software. **PRO/CON:** Very small and light, reasonably priced; limited number of status lights, no external power switch, serial cable is not detachable, no on/off switch.	645
3	Motorola ISG ModemSurfr 56K Desktop Data/Fax Modem Model 3456 800/566-3266 www.mot.com/modems	NEW	$179	76	2:34/3:08 [1]	**FEATURES:** Uses K56flex protocol, 115.2-kbps PC-to-modem speed, V.80 videoconferencing protocol, distinctive ring, Caller ID, Trio Communications Suite 5.1 fax/data software. **PRO/CON:** Company guarantees free upgrade to the final 56K standard even if that means swapping the modem; documentation only on CD-ROM.	646

Best Buy For expanded reviews, visit www.pcworld.com/t10modems. [1]V.34 TAS transfers/56-kbps ISP downloads; see "How We Test." All products: 904

HOW WE TEST We test 33.6-kbps modem-to-modem performance using a pair of identical modems on a Telecomm Analysis Systems (TAS) simulated phone network. It sends a text file over 55 line conditions, and a mix of five files—graphics, text, program, and compressed files—over one line condition. For our 56-kbps tests, we call a local Internet service provider access number and transfer .jpg, .doc, and .zip files continuously over an 18-hour period. The times to transfer a megabyte of data are higher in the ISP test than in the TAS test because the files used in the former are different and less compressible. Results for the two tests are not comparable. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.



NEW TECHNOLOGY does not always require big bucks. All three 56-kbps modems on our chart have moderate prices and good speed. The 3Com/U.S. Robotics Sportster 56K was the fastest at downloading files from our Internet service provider and is nicely designed. Sticking to 33.6? You can find great values: Four of the seven here cost $130 or less. It's not cheap, but 3Com/USR's Courier V.Everything 33.6 is quick and has extensive features. ■

We've contributed several advances to the notebook PC.

MMX™
intel inside®
pentium®
PROCESSOR

Greater availability because NEC is one of the world's largest manufacturers of TFT LCD displays.

12.1" SVGA active matrix TFT display with 64K colors at 800 x 600 resolution for a brighter, richer, photorealistic display.

Intel® 166MHz Pentium® processor with MMX™ technology.

VersaBay modular component technology for maximum flexibility and instant customization.

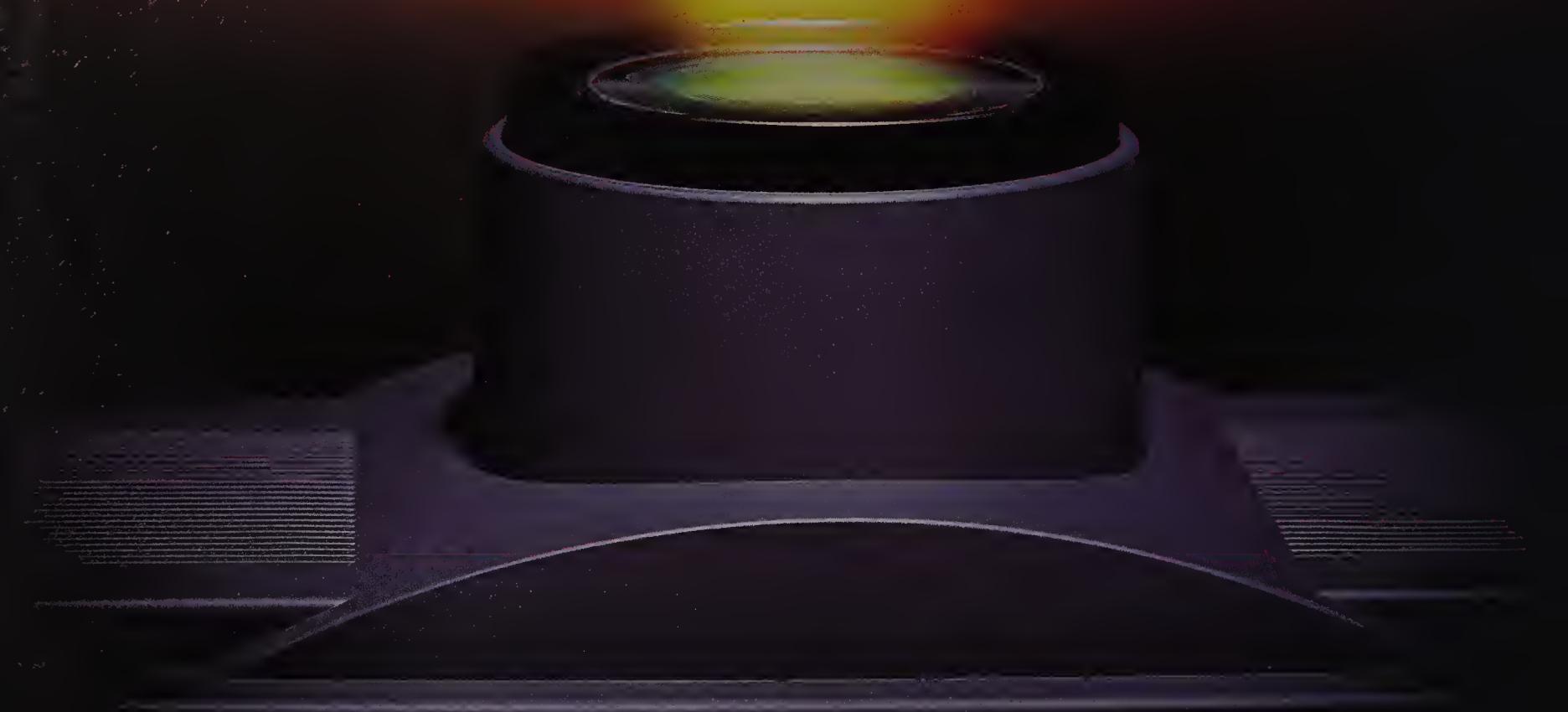
Security features: multiple password protection, built-in docking station alarm.

BUILT TO ORDER

Circle 158 on reader service card

[ANNOUNCING THE POLAVIEW 315 MULTIMEDIA PROJECTOR.]

HOW YOU KEPT YOUR AUDIENCE ON THE EDGE OF THEIR COLD, GRAY METAL CHAIRS BEFORE IS BEYOND US.



Some people are natural presenters. The other 98% of us, well, we rely on cool features. Our new Polaview 315 multimedia projector not only has picture-in-picture so you can run both video and data at once, PC card it also supports a pc card that allows you to play back your presentation without lugging along your computer. Pretty smart, huh? Couple that with other features like power-zoom power keystone correction, and the

brightest 24-bit color, 600 ANSI lumens XGA 1024x768 PIXELS and you've got yourself a world-class electronic conference room indeed. To learn more about our complete line of Polaview multimedia projectors or to receive a free CD-ROM demonstration, call 800-816-2611, ext. 045

Polaroid

Circle 179 on reader service card

"Polaroid" and "Polaview" are trademarks of Polaroid Corporation

ON THE CUTTING EDGE OF PRESENTATION TECHNOLOGY

GET MOBILIZED WITH TODAY'S ADVANCED, MOBILE LCD PROJECTORS.

Over the past decade, the ever-growing power and sophistication of PCs and software have pushed presentation output capabilities into the stratosphere. So much so that today it doesn't take a graphics superstar to create a stunning, attention-grabbing presentation—or even a full-blown multimedia extravaganza. Which means that all walks of professionals—from educators to corporate training, sales, and finance experts—now have on their desktops all the power it takes.

But what's the best way to take the masterpiece that resides on your hard drive and project it with high-impact persuasiveness for

all the world to see? That's not an easy question. But if you first can determine exactly what your needs are and how much you're willing to spend, it's a question that can yield many good answers.

First, narrow your options. Multimedia presentations? The terminology covers a lot of turf—from training modules on corporate intranets, capabilities presentations on the Web, and desktop videoconferencing, to the more familiar variety involving face-to-face interaction.

Epson's PowerLite 5000 provides excellent color saturation and contrast for captivating presentations.

It is this last variety, and the tools that can help you succeed, that are the focus of this overview.

LCD projectors lead the way in mobile presentation technology. LCD projectors are all-in-one units that use their own internal light source to project up to room-size images from computers. Some models accept video signals and offer stereo sound. LCD projectors are quite easy to use. It's basically a question of connecting your laptop to the projector, familiarizing yourself with the functions, turning it on, and you're off and running.

Because they concentrate their light output through a single lens, LCD projectors are about twice

WHAT'S BEHIND THE EXPLOSIVE GROWTH IN MULTIMEDIA PROJECTION?

In the peripherals marketplace, multimedia projection is one of the fastest-growing sectors. Since the introduction of the first LCD display panel in 1987, sales worldwide for LCD panels and projectors have gone from zero to nearly $2 billion. That's not to mention related products such as the software used to generate presentations.

The benefits propelling this growth are well documented. First and foremost is the presentation itself: When vivid color, riveting video, dazzling effects, and stereo sound team up, the effects on the audience are unmistakable. Multimedia presentations are simply more memorable and more effective. And not only that: Since today's presentation technology often works in well-lighted rooms and is more versatile, predictable, and easy to use than many of the old, "traditional" techniques (such as overheads and slides), the presenter is able to do a better job concentrating on the audience and the message—instead of the equipment. Bottom-line boosting competitive advantages like these have business professionals of all stripes flocking to multimedia projection.

And fortunately, the market is responding with products that are increasingly powerful, portable, and affordable.

Among other pluses, Sanyo's new PLC-5500NA features power zoom and focus and stereo speakers.

ViewSonic® makes your bright ideas brilliant.

Remote control included

The PJ800 projects a sharp, crisp image even in well-lit rooms.

The new Macintosh® and PC compatible PJ800 is a 3-panel (1.3" each) LCD Projector that provides rich screen colors and eliminates the "wash out" typical on most 1-panel LCD projectors. Its eye-opening 800 x 600 true resolution brightens any presentation. And with Advanced Video Compression, you can get 1,024 x 768 resolution while the images stay as sharp as if they were not compressed. With a 200:1 contrast ratio, you can project anywhere from 30" to 300" diagonal with confidence. It comes complete with a remote control and a 260 Watt DC metal halide lamp that lasts up to five years with normal use. What a brilliant solution to your A/V needs.

PJ800
550 ANSI Lumens
3-panel 1.3" Active LCD
3,000 hour, 260W DC Metal Halide Lamp
800 x 600 (SVGA) or 1,024 x 768 w/Advanced Video Compression
Macintosh® & PC Compatible

Brilliant. But then, that's why ViewSonic is "The Display Technology™ Company."

ViewSonic backs the new PJ800 with the brilliance and value that have helped us explore and conquer new fields of visual excitement. In addition, the PJ800 is backed by our limited 3-year warranty on parts & labor.*

For more information call ViewSonic at (800) 888-8583 and ask for agent 7867, or visit our website at: www.viewsonic.com.

(909) 869-7976 Fax: (909) 869-7958 • Internet: www.viewsonic.com • Specifications subject to change without notice
© Copyright 1997, ViewSonic Corporation • All rights reserved • *90 Day Warranty on Lamp.

ViewSonic®

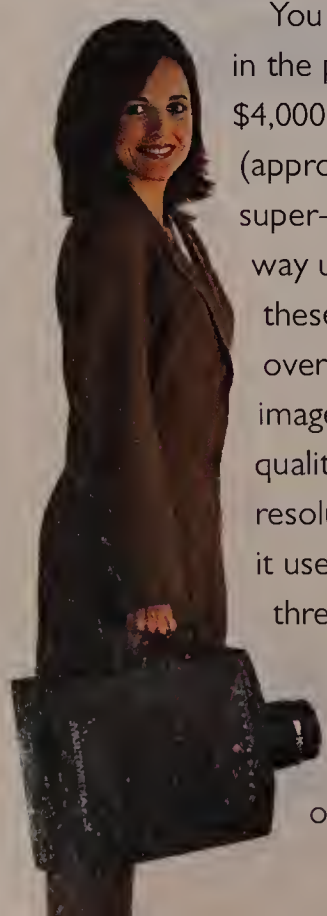
Circle 252 on reader service card

as bright as an LCD projection panel and overhead projector combination. Additionally, since no overhead is required, LCD projectors are much more portable and less intrusive at the presentation site than a panel and overhead duo. Of course, these benefits come at a cost: while LCD projection panels top out at around $2,500, LCD projectors range from about $4,000 up to $13,000 and more for high-resolution units with stereo speakers and multiple computer and video inputs. At the very top of the line, full multimedia projectors generally offer zoom lenses, top-notch video and stereo output, sophisticated resizing technologies, and metal halide lamps for super-sharp projection. Most of the better machines support international video standards such as NTSC, PAL, and SECAM.

In addition to 600 ANSI lumens and XGA resolution, Polaroid's Polaview 315 has advanced features such as power-image zoom and power-focus.

Things to consider before buying.

The range of features that differentiates LCD projectors is quite large. And with nearly 40 manufacturers serving up more than 150 models (frequently under a number of different private labels), it can be confusing and time-consuming to sort them out.



You should know that there are three camps in the projector arena: entry-level (in the $4,000 to $7,000 range); high-performance (approximately $8,000 to $13,000); and the super-high performers that can run all the way up to $55,000 or more. What's driving these vastly differing prices? It's quite an over simplification, but the short answer is image quality. A longer answer is that image quality is a function of the projector's native resolution mode, the number of devices it uses to project an image (one panel vs. three), and the technology it uses to resize images coming from a laptop having a different resolution. All those things, of course, add up. So at the front end of the selection process you have to ask yourself to what degree image quality matters. Because the better the image, the more you'll pay.

Let's run through a list of other considerations that can help you narrow your list:

Portability—Are you looking for a road warrior, or a system to use within the corporate campus? If you're often on the road, traveling by airplane, you'll want to consider a small, lightweight projector. Epson, ViewSonic, and Sanyo offer excellent traveling companions. For ultimate portability, the brand-new Polaview 315 from Polaroid provides built-in PC card playback mode, so you can even leave your laptop back in the office.

The majority of projectors are in the 15-pound range, with 20-24 pounds filling in the top end. As a rule, heavier projectors tend to provide better image quality. So, if the projector is likely to spend a lot of time in a fixed installation—a conference room, for instance—a heavier projector is not a bad idea (the Mitsubishi LVP-X100 is a top performer in the above-20-pound

Weighing in at 20 pounds, Mitsubishi's LVP-X100 provides high-resolution XGA output with 600 ANSI lumens of brightness.

(Brother can you paradigm?)

1000 LUMEN VGA/S-VIDEO FOR ONLY $5495! 800 LUMEN SVGA/S-VIDEO FOR ONLY $6995! *

Now you can get a crisp brilliant 4- to 40-foot image from your PC, Mac, TV and VCR with the new WallZapper™, the world's brightest portable projector

Hey, paradigms were meant to be shifted. Especially the one that said "projectors couldn't be *both* portable *and* bright." Because our new paradigm has something in it for everybody: brightness, portability, color, unbelievable clarity, low cost and High-Resolution PC/TV S-Video. What more is there anyhow? Now you can project your product as big as you want even in a fully lit room! And like the famous salesman says, "You can't sell 'em if you can't see 'em." And you can make those conference calls life size, too. As if you're all in the same place. Sure brighter's better — it makes possible all the other good things like color, contrast and size!

And it's carry-on portable

So now all you need for remarkable presentations are your trusty 19.8 pound carry-on WallZapper™ and camcorder or power-notebook. That's it: just plug in, lean back and watch their jaws drop.

What is the WallZapper™?

The Prolux WallZapper™ zaps a sharp, 1000 ANSI lumens (yes, a full 1000!) with a 16.7 million displayable color palette, 150:1 contrast ratio, full support for NTSC, PAL, SECAM, stereo audio input for each source, and user replaceable super long-life metal-halide bulb for only $5495!

2000 lumen WallZapper™Stacker

For stadiums, auditoriums, schools and churches, the WallZapper™Stacker gives twice the brightness at the lowest cost-per-lumen in the industry. Brilliance was never as inexpensive or easy as this!

The "Prolux Story"

WallZapper™1000 is the brainchild of Prolux's Steve Wilson who invented much that's new in the world of illumination. He revolutionized stage/film lighting with a 'cool' lamp (equally bright at half the energy!). His cinema-projection illumination designs are now used in nearly all the world's movie theaters. His flash design is in most new US-made disposable cameras for twice the light allowing faster shutter speeds. *And all these products now lead in their fields!*

None better for entertainment

And you can't beat the WallZapper™ for king size home entertainment. Because brilliance reigns supreme there, too. It's the difference between small, dull, washed out, lackluster images with little impact that hardly entertain, and big, rich, bright ones that do. And little beats surfing the net, playing computer games eight feet huge, or watching old vids of the kids' wobbly first steps life-size.

Where to get WallZapper™

So call 1-800-3PROLUX for the location of your nearest Prolux dealer for a demo and to fill all your presentation and entertainment needs, including peripherals, screens, installations, accessories and information. Also, be sure to clip and save this ad for future reference — you'll be very glad that you did.

*Prices suggested retail, subject to change without notice.

©1997 Prolux Corporation, 32961 Calle Perfecto, San Juan Capistrano, CA 92675-4705 www.prolux.com

Prolux™ WallZapper1000™

WORLD'S BRIGHTEST PORTABLE PROJECTOR!

*Suggested retail prices and specifications subject to change without notice.

© 1997 Prolux Corporation, 32961 Calle Perfecto, San Juan Capistrano, California 92675-4705 www.prolux.com

Circle 186 on reader service card

Princeton Graphics Pro-375 provides high-quality images that can be viewed with or without a screen—even under ambient light conditions.

category). If your projector is going to be a truly permanent installation, you may want to consider one that can be mounted on the ceiling.

Presentation Setting—The size and characteristics of the setting in which your presentations typically take place will influence the image quality you require of a projector. Is it normally a large room? What is the size of the audience? Are the lights on or off? If the presentation is before a smaller group, many presenters prefer to enhance the intimacy of the setting by leaving the lights on; it's easier to do an "in-the-dark" presentation in front of 150 people than it is in front of a gathering of 20. So the size of your audience will determine your brightness needs. Also remember that larger screens require more lumen to fill them:

- 400+ ANSI lumens in a fully lighted room
- 150-400 ANSI lumens in a partially lighted room
- 150 ANSI lumens in a dark room.

In larger settings, you'll definitely want full-featured remote control capabilities. Most projectors offer remotes, but the extent of what they can do varies. If you're the type of presenter who likes to roam around the room, be sure to get one that provides remote mouse capabilities. And if you're often in particularly large rooms, you might also want a projector that can accommodate the supplemental audio support of external speakers.

WITH RESOLUTION LIKE THIS, THE ONLY DIFFERENCE BETWEEN THESE TWO IMAGES IS THE SIZE.

Introducing the EPSON PowerLite™ 7000 projector with 1024 x 768 resolution.

Finally, a projector that gives you the power to present your ideas anywhere, under any lighting condition, using any kind of computer.

Because only EPSON,® the world leader in portable projectors, gives you SizeWise™ technology. That means you get an amazingly clear presentation that's a dead ringer for your computer screen. Just a whole lot bigger. And at less than 15 pounds, it's as easy to carry as it is to set up and use.

For more information on our award-winning line of projectors and a free video, dial 1-800-442-1977 and ask for Operator 3088. Or visit us at www.epson.com

EPSON is a registered trademark of Seiko Epson Corp. PowerLite and SizeWise are trademarks of Epson America, Inc. ©1997 Epson America, Inc.

Polaroid's unique picture-in-picture feature lets users simultaneously run output in two different media—such this chart within a video clip.

Presentation Format—What is the content of your presentation and how was it generated? All projectors will run presentations generated by popular presentation software such as Corel Presentations. Highly specialized engineering and scientific imagery generated by workstations will look best on projectors with XGA resolution (1024 x 768), much higher than the VGA standard 640 x 480. Polaroid's Polaview 315, for instance, provides exceptional sharpness and clarity, making it ideal for projecting CAD/CAM, medical, and technical images.

Most laptops today support SVGA resolution (800 x 600), so a projector with that resolution is appropriate in most cases. Will the presentation incorporate sound and video from sources external to your laptop? Then you'll need separate video inputs for VCRs, laser disc players, and live video cameras.

And finally, be sure to determine in advance if the projector will be shared by multiple users. Most projectors have just one computer input, allowing only one notebook to be hooked up at a time. If you're likely to be giving "tag-team" presentations, you'll need a projector with multiple inputs, like the Epson PowerLite 5000 or the ProLux WallZapper 1000.

QU'VE GOT TO SEE IT IN EPSON COLOR.

Circle 92 on reader service card

LUMEN

THE HOLY GRAIL OF PROJECTION TECHNOLOGY

The most common benchmark for comparing projectors is brightness. And the most common brightness standard is the ANSI (American National Standard Institute) lumen, a measurement based on the average of light taken from nine sections of a projected image. Like most things in life, the more ANSI lumens you have, the better. Most projectors fall in the 300 to 600 range. There are some powerful exceptions, an affordable example being the ProLux WallZapper 1000V with a full 1000 lumen output. In the past, the relationship between brightness and weight was quite direct: the heavier the machine, the brighter. That, however, is changing. You can now find several relatively light portables with 400 or more ANSI lumens.

Brightness is a function of how efficiently the machine converts lamp wattage into a projected image. In this regard, three-panel systems seem to do a better job, and will generally throw more lumens than a single-panel unit with the same lamp.

When comparing projectors, be sure you're going apples to apples. In addition to ANSI lumens, some manufacturers will state brightness in terms of lux or lumens. Additionally, brightness is often reported as maximum, minimum, or typical. The bottom line is that you have to watch the terminology carefully to be sure you're making an accurate comparison. More often than not, the best way is with an old-fashioned eyeball test. Also keep in mind that the type of lamp has a strong impact on brightness. Halogen lamps throw a slightly yellow light, while metal halide lamps give a whiter cast.

With 1000 ANSI lumen output, the ProLux WallZapper 1000V is one of the brightest projectors available in any cost category.

To VGA or not VGA?

The question of resolution has generated a lot of confusion in the LCD marketplace. Since most presenters prefer to deliver presentations without having to switch drivers or change the resolution mode of their notebooks, the impulse is to get a projector with the same resolution as the computer that will drive the presentation. That's a good idea, especially if you want the projected image to look like what you see on the notebook screen. But the fact is that projectors of any resolution mode can accommodate computers having a different resolution. The question to ask is what technology do they use to do that. The entry-level machines will usually rely on "line dropping," a variety of compression that removes lines from the image in order to make it fit. In the process, the image can suffer quite a bit.

NO YOU HAVEN'T LOST YOUR MIND. YOUR KEYBOARD IS RINGING.

LIMITED TIME OFFER

~~$149.95~~

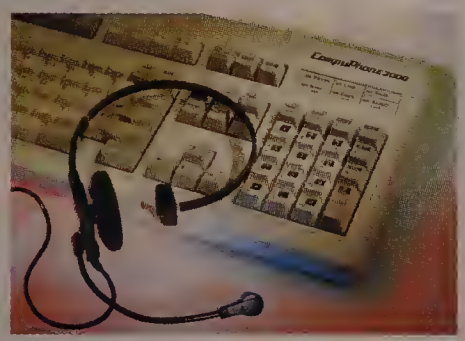
$124.95*

Order now and get up to

$100 IN COMPLIMENTARY SOFTWARE**

In the following categories: business, reference, games, & entertainment.

CompuPhone 2000®
The only keyboard with a built-in telephone.



Although it has a familiar ring, CompuPhone is totally innovative, (if not downright ingenious).

Answer your calls and dial right from your long-life, high-performance PC keyboard. Talk hands-free with a comfortable, lightweight headset. And gain precious desk space because you no longer need a separate phone on your desk.

CompuPhone is backed by a 30-day money-back guarantee and a one-year limited warranty. Should you need it, there's free technical support.

Just to give you an idea of how much value you're getting, comparable headsets retail for $100 or more. Which is close to what you'll pay for this highly-efficient headset-keyboard-telephone. Because for a limited time, you can buy CompuPhone at a $25 discount and get free shipping. Plus receive a bonus of up to $100 in popular software titles.

So call us 1-888-CHAT-ITI, (242-8484). With all the ways CompuPhone helps to make your life sane, you'd be crazy not to order right now.

Order now at 1-888-CHAT-ITI, (242-8484) ext. 36

Integrated Technology USA, Inc.™

Products that get people talking™

www.iti2000.com

1997 CTI EDITORS' CHOICE

*Free shipping of CompuPhone 2000® in the Continental U.S. via UPS ground. **CompuPhone 2000® comes with 2 coupons redeemable for up $100 worth of complimentary software. You pay $3.95 per coupon for shipping and handling. ©1997 Integrated Technology USA, Inc. For a complete copy of our Guarantees or Limited Warranties, please write Integrated Technology USA, Inc., P.O. Box 3406, Teaneck, NJ 07666. Prices and specifications valid in the U.S. only and subject to change without notice. Prices do not include applicable taxes. CompuPhone 2000 is a registered trademark of Integrated Technology USA, Inc. Mentioned trademarks are registered trademarks of their respective owners.

A LITTLE BACKGROUND ON PROJECTION TECHNOLOGY

The terms get thrown around a lot. So what exactly do they mean?

Single-Panel LCD **LCD is a transmissive technology. Single-panel projects light through a single panel of glass, poly-silicon, or an active-matrix LCD containing red, green and blue pixels. Many entry-level projectors use this technology because it offers a clear focus at a lower cost.**

Three-Panel LCD **In this technology, light is projected through three LCD panels, each responsible for a different color—red, green and blue. Then, with prisms and mirrors, the image is focused to deliver the final projected image. Three-panel systems offer better images, with increased color saturation and contrast. They do, however, weigh and cost more than single-panel machines.**

DLP (Digital Light Processing) **DLP is a patented technology from Texas Instruments. DLP is not a transmissive technology like LCD. Rather, it is a reflective system that sends light through thousands of digital mirrors that reside on a microchip before projecting the final image.**

Epson's PowerLite 5000 has the versatility to simultaneously accommodate a variety of input sources, including two notebooks running on different platforms.

A growing number of manufacturers, however, are moving to more complex resizing technologies to allow their projectors to work optimally with a variety of native mode laptops. Epson, among others, offers a rather sophisticated recalculating algorithm with its top-line products. If you're planning on upgrading your notebook to a higher-resolution model, it would be good idea to look at projectors that handle a variety of resolution modes well.

There are three major resolution options currently in the projector market:

VGA (640 x 480)—This is the most common resolution for notebook computers that were shipped prior to 1996. Most entry-level projectors are VGA or SVGA.

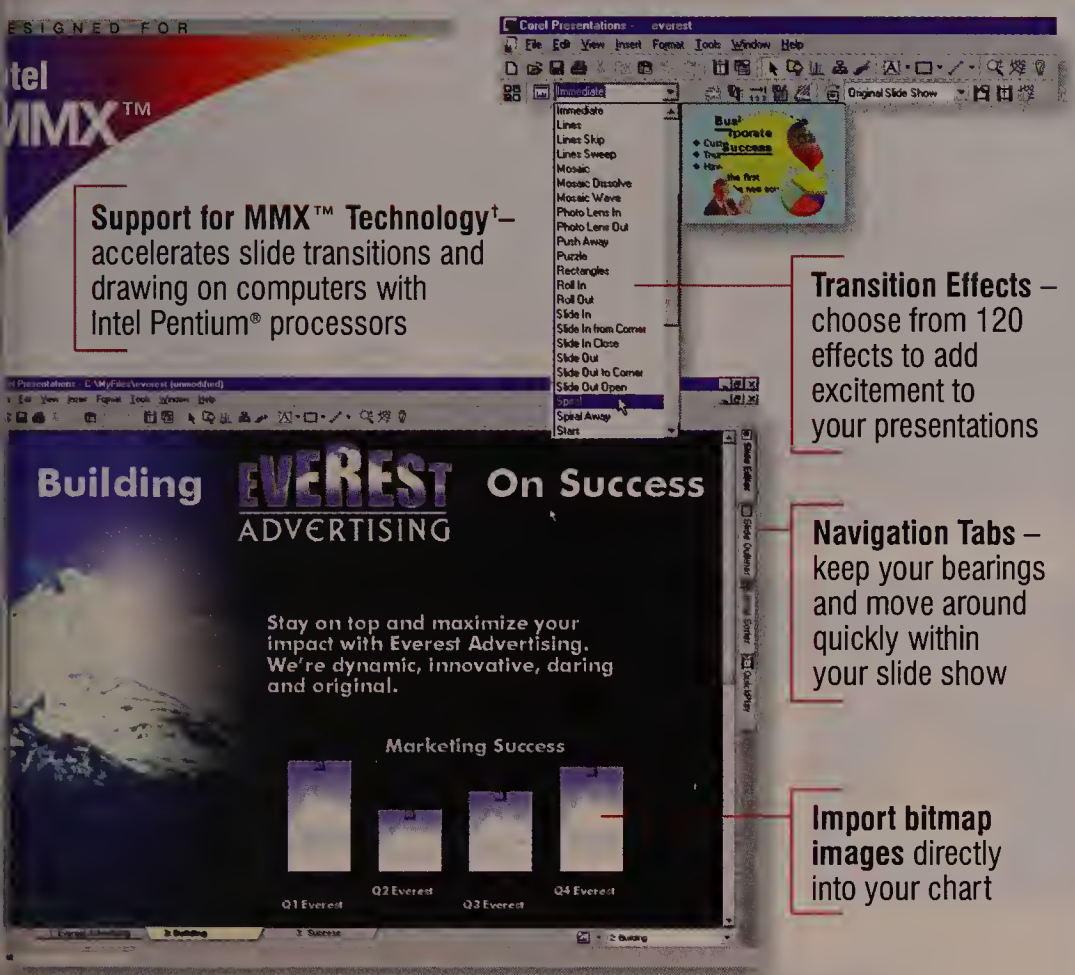
SVGA (800 x 600)—This resolution is becoming the new standard for notebooks, primarily because it is the default setting on Windows 95. With SVGA, more information can fit on the notebook's screen—and thus provide a larger projected image.

XGA (1024 x 768)—The future of notebook computers lies in XGA

ViewSonic's PJ800 utilizes three LCD panels to project sharp, well-saturated color images.

Corel® WordPerfect® Suite 8 is the Only Office Suite that Delivers Support for

MMX™ Technology†



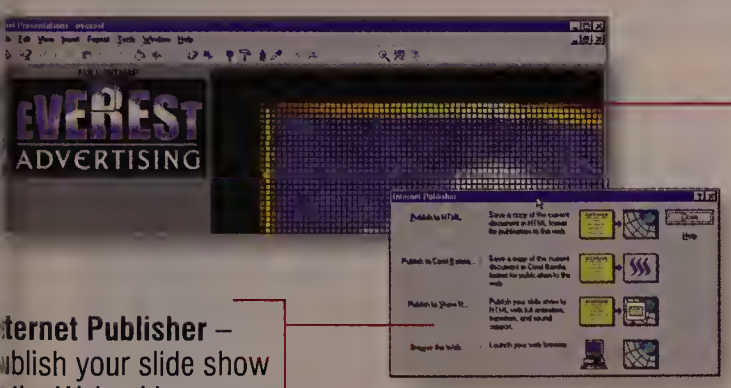
ESIGNED FOR
tel
MMX™

Support for MMX™ Technology†– accelerates slide transitions and drawing on computers with Intel Pentium® processors

Transition Effects – choose from 120 effects to add excitement to your presentations

Navigation Tabs – keep your bearings and move around quickly within your slide show

Import bitmap images directly into your chart



Edit bitmaps within Corel Presentations 8 to create desired special effects

ternet Publisher – ublish your slide show the Web with ease

For graphically charged presentations that will electrify your audience, take advantage of Corel® Presentations™ 8—a powerful part of Corel® WordPerfect® Suite 8, the most innovative office software on the market. With all the great tools you've come to expect from your presentation software, plus features you won't find anywhere else, Corel Presentations 8 delivers showstopping results every time.

Presentation Features	Corel® Presentations™ 8	Microsoft® PowerPoint® 97
Support for MMX™ technology	✔	no
Publish to Java™ (Corel Barista™)	✔	no
QuickKeys™ keystroke actions (such as go to another slide, launch an application, play a sound, or even link to a URL)	✔	no
Add multiple slides simultaneously	✔	no
Import outlines into org. charts	✔	no
Customizable background gallery	✔	no
Slide navigation tabs	✔	no
Chart styles	✔	no
Range Highlighter used in datasheet	✔	no
Sort pie slices	✔	no
Separate drawing mode	✔	no
QuickWarp™ objects	✔	no
Blend objects together	✔	no
Place/Resize/Rotate chart	✔	no (must separate into objects)
Gradient fill (text and objects)	✔	objects only
Quick 3D any image	✔	drawing objects only
Slide transitions	120	41
Data chart functions (equations)	16	7

Corel® WordPerfect® Suite 8
Office Suite Excellence

ow available! Contact the reseller nearest you.

BEST BUY

COMPUSA THE COMPUTER SUPERSTORE 1-800-COMPUSA

OfficeMax® Taking Your Savings To The Max! 1-800-788-8080

$149.99* Competitive upgrade CD-ROM version

Corel, Official World Title Sponsor of the COREL WTA TOUR

www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1383

KUR-0462-US

Pentium processor not required to run Corel WordPerfect Suite 8, only necessary for users who want to take advantage of the suite's support for MMX technology
upgrade version only. US$ plus applicable taxes and shipping. Dealer may sell for less. Prices may vary from store to store.

ight © 1997 Corel Corporation. All rights reserved. Corel, WordPerfect, Presentations, Barista, QuickWarp, QuickKeys and the Corel balloon logo are trademarks or registered trademarks of Corel Corporation or Corel Corporation Limited. MMX, the MMX logo and Pentium are trademarks or registered trademarks of Intel oration. Java is a trademark of Sun Microsystems, Inc. All other product, font and company names and logos are trademarks or registered trademarks of their respective companies.

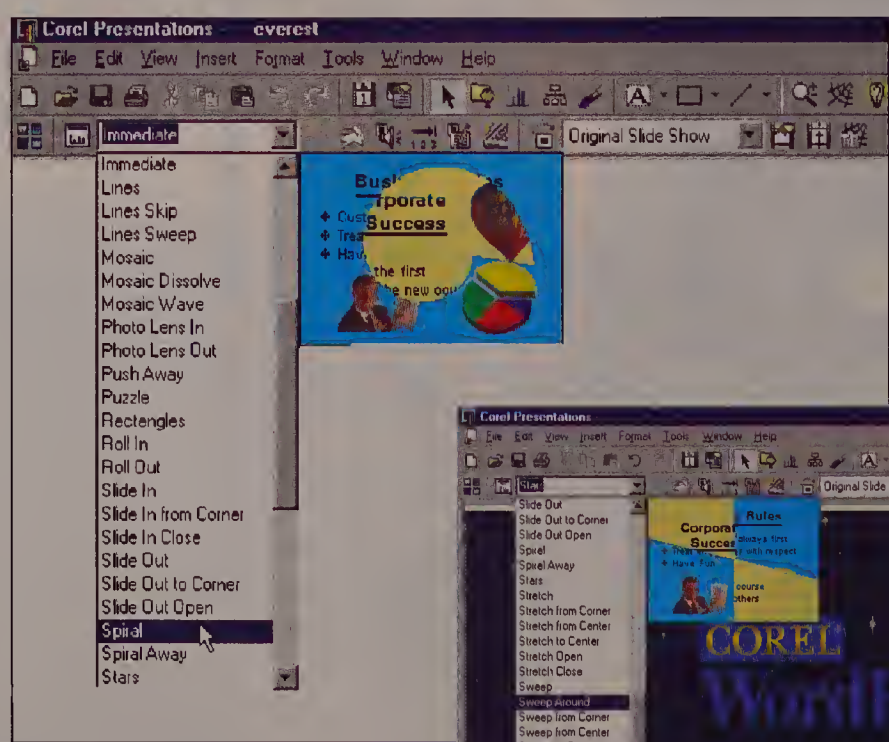
resolution. Because of this, many people feel compelled to buy projectors that will support the next generation of laptops. But keep in mind that SVGA projectors will work fine with XGA computers. So unless you have special, high-resolution needs—such as using CAD/CAM output from workstations—you may be better off with an SVGA projector. That's because the XGA models, for the moment, are heavier and more expensive.

Don't be content with mediocre content.

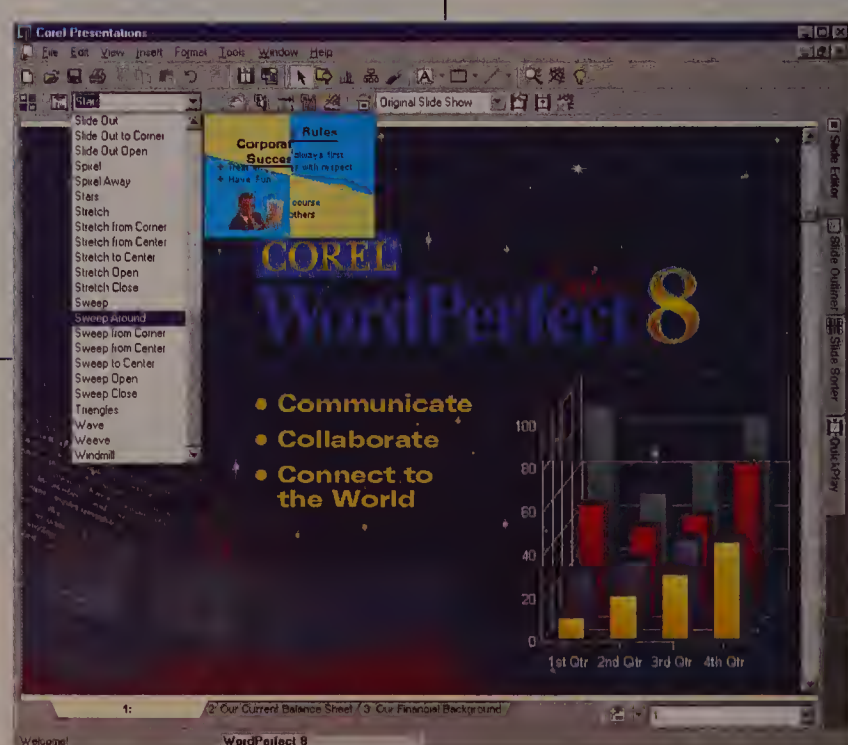
Multimedia presentations on PCs have come into their own in the past few years. That's because the software—once strictly in the realm of the computer-graphics pros and the Mac users—has become much more easy to use on Windows systems. So today, basic authoring is relatively simple (high-end multimedia authoring is still a complex endeavor requiring a good amount of ramp up).

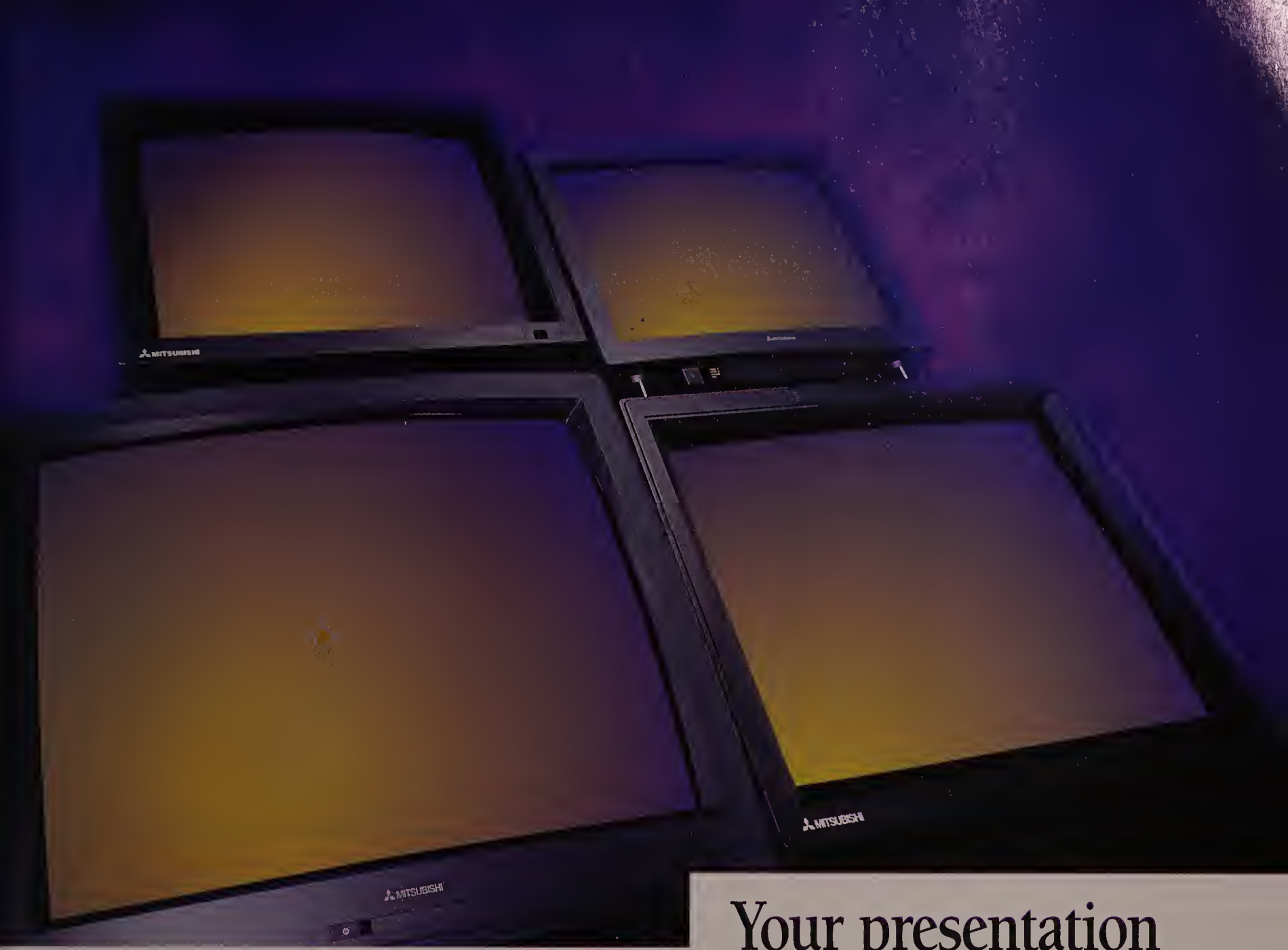
There is a variety of programs that are affordable, easy to use and, in most cases, sufficiently robust to meet general business presentation purposes, including simple multimedia. Most of these entry-level packages allow users to incorporate basic effects, animation, and video (Apple QuickTime or Microsoft Video for Windows) into their text and chart presentations. Many also offer hypertext linkages, letting users alter the sequence of their presentations on the fly. Good standard presentation packages include Adobe Persuasion, Claris Impact, and Corel Presentations.

Higher-end multimedia will generally require software that carries with it a longer learning curve and a larger price tag. If you're up to the task, you'll get more powerful drawing and animation capabilities, as well as more sophisticated internal scripting and sequencing tools. These packages—including Alpha Software Bravo, Asymetrix Compel, and Q/Media—have the power to create fairly complex presentations without programming. For full-blown multimedia authoring—the kind



Accelerated to take advantage of MMX technology, Corel's new Presentations 8 provides over 100 backgrounds, layouts, and transition effects to add a professional touch and excitement to any presentation.





Your presentation was designed to make a big impact.

How big would you like?

You've worked hard to get your presentation just right, utilizing today's most advanced software. Now comes an equally important decision. Hardware. What will make your presentation even more powerful, persuasive and truly memorable? The answer is Mitsubishi's MegaView large screen monitors. With the industry's widest range of screen sizes and auto-scanning frequencies, Mitsubishi's MegaView monitors have set the standard in image clarity, color and sharpness–even in high ambient light. So now you can actually see and observe your audience as you dazzle them with high resolution imagery. A big impact presentation requires a big monitor. Call us at **1-800-843-2515**. In Canada call **1-800-387-9630**. *For immediate product specifications, call Mitsubishi Qwikfax at 1-800-937-2094.* www.mitsubishi-display.com

MEGAVIEW™
The Biggest Name In Large Screen Monitors

THE MITSUBISHI MEGAVIEW PRODUCT LINE

Model	CRT Size	Maximum Addressable Resolution (HxV) RGB	Auto-Scan Range	
MegaView 29	29"/27.0" DVI*	640 x 480/66 Hz NI	H: 15-39 kHz	V: 45-100 Hz
MegaView 33	33"/31.2" DVI*	800 x 600/60 Hz NI	H: 15-38 kHz	V: 40-120 Hz
MegaView 37 Plus	37"/35.0" DVI*	1024 x 768/75 Hz NI	H: 15-61 kHz	V: 40-120 Hz
MegaView Pro 37	37"/35.0" DVI*	1280 x 1024/75 Hz NI	H: 15-85 kHz	V: 40-120 Hz
MegaView Pro 42	42"/40.0" DVI*	1280 x 1024/60 Hz NI	H:15.75 & 20-64 kHz V: 45-120 Hz	

* DVI: Diagonal Viewable Image.

MITSUBISHI
DISPLAY PRODUCTS
*Innovation On Display*sm

©1997 Mitsubishi Electronics America, Inc. MegaView is a trademark of Mitsubishi Electronics America, Inc.

Circle 154 on reader service card

you might find on a corporate intranet—you'll have to take a big leap up to a highly sophisticated tool like Macromedia Director.

MAKING SUCCESSFUL PRESENTATIONS

Great equipment is a big help, but making a successful presentation requires being prepared for the unexpected. Here are a few things to remember before you take the plunge into your next presentation:

- Test, and retest, all your equipment in advance of the presentation (off site and on site).
- Run through your rehearsals using the same equipment—and all of it—that will be on site at the real event.
- Don't forget Plan B: If your projector dies or your computer crashes, do you have a backup? Be prepared to go low-tech, and have the hand-outs and other materials you'll need ready to pull it off.

ViewSonic's PJ800 skillfully handles complex graphics.

This special supplement was made possible by the sponsors whose advertisements appear within its pages.

PRESENTATION RESOURCES

Okay. So you've seen the range of products, and now understand some of the differences. The list below, by no means exhaustive, can help you get more information. But the best way to really discover a solution right for you or your company is to head over to a reseller, discuss your needs and budget, kick the tires, and make a decision. It's time to get mobilized.

MANUFACTURERS

Corel www.corel.com
Epson www.epson.com
Mitsubishi www.mitsubishi-display.com
Polaroid www.polaroid.com
ProLux www.prolux.com
Sanyo www.sanyoservice.com/lcdhtm/lcdtech.htm
ViewSonic www.viewsonic.com

SALES & INFORMATION

Adtech www.adtech-sys.com
AV Innovations www.aviinc.com
Midwest Visual www.midwestvisual.com
Minnesota Western www.minnwest.com
Multimedia Solutions m-media.com/elecproj.html
Presenting Solutions www.presentingsolutions.com
Westek www.westek.com

PRESENTATIONS

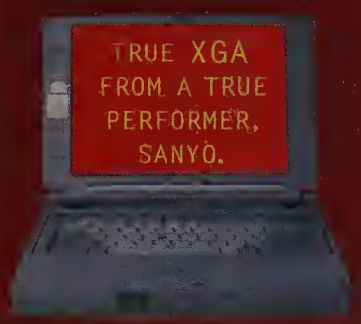
For daily online information about making effective presentations, visit **PC World's Presentations Tip of the Day Web site** at www.tipworld.com

JUST BECAUSE YOU WEAR A SUIT, DOESN'T MEAN YOU CAN'T KICK BUTT.

Let's face it, it's a battlefield. You only get one shot to make the right impression. So for your next presentation, trust the PLC-8800N with True XGA output from Sanyo to come through for you.

The lightweight PLC-8800N is the most versatile LCD projector on the market today, with many features no one else can match.

- Only 13 pounds including power zoom and focus
- Super-bright 500 ANSI Lumens with 85% image uniformity
- 120W UHP lamp for high performance, low power consumption
- Easy-to-use GUI onscreen menus
- PowerPad track pad remote



- Auto-Set controls fine synch, total dot adjustment, and positioning
- Mac, IBM and video compatibility
- Compressed EWS SXGA output and image panning for workstation compatibility

The PLC-8800N has it all, and is just one in Sanyo's full line of projectors that make presentations more presentable. So on your next presentation, take no prisoners. For a dealer near you, call (888) 495-3452 x288.

SANYO

For your most brilliant ideas.

© 1997 Sanyo Graphics Animation Presentation Products. Sanyo is a registered trademark of Sanyo Electric Co., Ltd. All other trademarks are the properties of their respective holders.

Circle 209 on reader service card

"Show them the *big* picture..."

and *all* the details!

Do you have information to share... a story to tell...a point to make?

Now you can communicate more efficiently and effectively, with the power of visuals *everyone* can see.

EIKI projectors *(pronounced Ā-key)* show big screen XGA/MAC19 or SVGA/MAC16 images...just as sharp and clear as they appear on your computer monitor.

With 500 ANSI Lumens brightness and up to a 400" diagonal picture size, these new EIKI projectors can handle almost any room condition or audience size. And their go-anywhere 14 lb. portability makes them a pleasure to use!

For more information, or a demonstration, call 800-322-3454.

EIKI

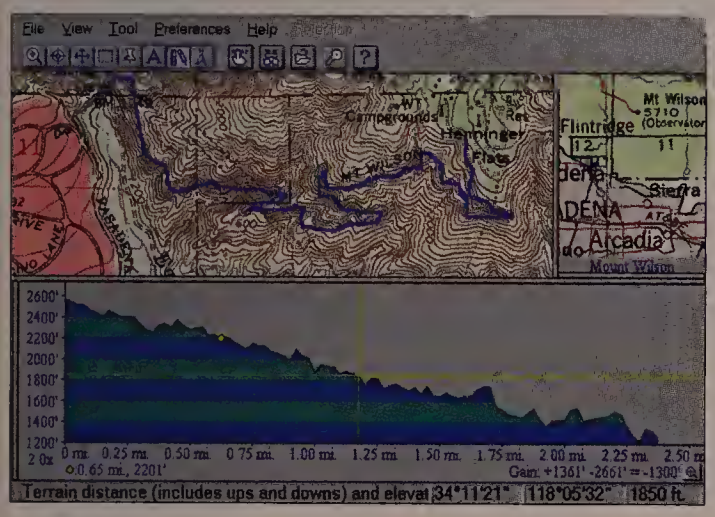
Ā-key to better communications.

Circle 88 on reader service card

Easy Photo Scanning, Make More Money

TAKE A HIKE

I WAS READY for a hike, so I laced up my boots, threw a few items into my day pack, and used my PC to create a customized topographic map in less than 2 minutes. I did it with **Topo Interactive Map,** a program that offers digitized, full-color topographic maps from the U.S. Geological Survey. I can locate areas, zoom up to five levels of magnification, find and mark trails, and determine elevations. I can also check mileage, change routes, annotate, and view elevation and topological features. And unlike similar packages, Topo's interface is easy and fun to use. The maps cover much of California, with separate CD-ROMs for Los Angeles, the San Francisco Bay Area, Yosemite, Lake Tahoe, San Diego, and other locations. Maps of national parks and designated wilderness areas are available for several additional states, including Arizona, Colorado, Minnesota, Utah, and Washington. Now, isn't it time you hit the trail? —*Steve Bass*



MAPPING IT OUT: Take a U.S. Geological Survey topographic map on your next hiking or biking trip.

Topo Interactive Map

GRADE: **A+**; PRICE: $59 list; Wildflower Productions; 415/558-8700; www.topo.com

READER SERVICE NO. 629

GET A JOB!

YOUR STERLING WIT, razor-sharp mind, and huge collection of power suits aren't worth a hoot until you actually get that job interview. And these days one of the best ways to do that is by posting your résumé online—if you know how, that is. Now you do, thanks to **WebResume.** An HTML editor and numerous templates allow you to quickly craft an attractive, well-written résumé—complete with all the right keywords for search engines—that's ready for posting on the World Wide Web. And for $10 a month, you can post your résumé on a password- (and supervisor-) protected Web page. WebResume will also automatically place your résumé on 12 of the largest job-search boards on the Web. Happy hunting. —*Kirk Steers*

WebResume

GRADE: **B**; PRICE: $49.95 list; Pacifica Internet Authoring Tools; 800/755-9036; www.careersteps.com

READER SERVICE NO. 630

BOOKSHELF UPDATE

HO HUM. As predictable as turkey on Thanksgiving, Microsoft has released a new and yet-again improved version of **Bookshelf,** its one-disc, multivolume reference work. The 1998 release includes the standard (though updated) reference works: a thesaurus, a dictionary, a book of quotations, a 1997 world almanac, a world atlas, The People's Chronology, a zip code directory, and an Internet directory (with hyperlinks). This year Microsoft has added a condensed version of Encarta, a computer/Internet dictionary, and a ▶

Scanning for the Masses

RECENTLY I BRUSHED the dust off dozens of pictures and scanned them into my computer using the **EasyPhoto SmartPage Pro.** This thing worked great! The quality was surprisingly good—the 30-bit color was correct and the image sharp. More surprising was how easy the scanner was to set up and use: It connects to a parallel port, and my printer attaches to the scanner. The scanner also detaches from the base, allowing me to scan books. After I scanned in the pictures (photos can be up to 8 by 10 inches), a bundled editing program let me modify them. I was able to remove scratches, change my red eyes to blue, and adjust the contrast and color. The SmartPage Pro includes Adobe PhotoDeluxe for more advanced editing, as well as optical character recognition and management software for scanned-in documents. —Steve Bass

EasyPhoto SmartPage Pro

GRADE: **A**; PRICE: $199 street; Storm Technology; 888/438-3279; www.easyphoto.com

READER SERVICE NO. 632

SCAN YOUR PHOTOS: The SmartPage Pro makes digitizing your photos easy.

EDITED BY Christina Wood

helpful parental control feature. But cheer up: Though Bookshelf 98 is even more indispensable than last year's version, the computer/Internet dictionary, which lacks such basic terms as *ISP, Java,* and *POP,* leaves plenty of room for improvement next year. —*James A. Martin*

Microsoft Bookshelf 98

GRADE: **A-**; PRICE: $55 street; Microsoft; 800/426-9400; www.microsoft.com

READER SERVICE NO. 631

RESTLESS NATIVES

INFORMATION JUNKIES, rejoice! The mammoth 30-disc **Complete National Geographic** contains every page of every issue of the award-winning magazine since 1888, including the advertisements (a great source of Americana), all indexed and searchable. You'll find informative articles with breathtaking pictures of everything from yawning chimps to stunningly colorful seashells to, yes, naked natives. Though the interface is intuitive, you'll never consume all 7500 articles—especially since some of the text scans (unlike the photos) are blurry. Too much knowledge for one human to handle? Nah. Simply enjoy the fact that Machu Picchu is at your fingertips—whenever you so desire. —*Harold Goldberg*

WORLDS OF INFORMATION: Complete National Geographic brings you every issue of the legendary magazine.

Complete National Geographic

GRADE: **B+**; PRICE: $199 street; Mindscape; 800/234-3088; www.mindscape.com

READER SERVICE NO. 633

SLAPHAPPY

EVEN IF YOU can't ice-skate to save your life, you can launch furious slap shots with **NHL Powerplay '98.** For a computer sports game, this is easy to get the hang of. And if you don't have a souped-up PC, you can choose the 2D version during installation, which requires a Pentium-75. But, as you'd expect, the 2D game isn't as cool. The 3D version, which needs a P-133 and a 3D graphics board, looks a lot more realistic, and the camera sweeps in and out of the action so you feel like a part of the game. You can even throw down the sticks and land a few punches. Hey, it's the NHL, so what's more realistic than a brawl? —*Brad Grimes*

NHL Powerplay '98

GRADE: **B+**; PRICE: $50 street; Virgin Interactive Entertainment; 800/874-4607; www.vie.com

READER SERVICE NO. 634

COLOR ME CREATIVE

I'M A GREETING CARD junkie, but I may never go to a stationery store again. With **PrintMaster Gold Deluxe 4.0,** I can create cards, brochures, posters, newsletters, and more on my home computer. With 25,000 graphics to choose from, I won't run out of designs I like. If I'm not feeling creative, I can select from more than 1500 sentiments, and I can either choose a ready-made design or make my own. Photo-editing software is included, so I can paste my own digitized pictures into my creation. The best new feature lets me e-mail cards to friends or post them on PrintMaster's Web site (www.printmaster.com). —*Angela Freeman*

PrintMaster Gold Deluxe 4.0

GRADE: **A**; PRICE: $50 street; Mindscape; 800/234-3088; www.printmaster.com

READER SERVICE NO. 635 ■

F Y I

DESPITE ALL the glitches and risks, two-thirds of the people who shop online intend to purchase through the Internet in the future. Mostly, they plan to buy more airline tickets and make more hotel reservations.

SOURCE: AT&T SOLUTIONS/MERCER MGMT CONSULTING

KEEPING UP

Food on the Web

GROCERY SHOPPING is one of life's necessary evils. I'd be happy if my cupboards magically filled themselves without my ever having to leave the house. That will never happen—but www.netgrocer.com at least allows me to shop while accomplishing something productive like...er...surfing the Web. The site uses FedEx to deliver the nonperishable goods I order. Waiting for its graphics to draw is a little like waiting in line at a supermarket checkout counter (though you gotta get dressed to go to the store). But this site makes selecting products easier. You can search for juice by sugar content, for soap by price, for sauces by calorie count. And the prices are pretty good—in some cases better than the warehouse outlets'. But you must pay for shipping.

Get a Car Loan in Your Jammies

NOW YOU CAN get a car loan—or just check the current rates for your area—without prying your fingers from the keyboard. Check out www.autobytel.com, which helps you buy a car online. A recent agreement between Auto-By-Tel and Chase Auto Finance makes it all possible. You choose a car and submit a purchase request online, then fill out a loan application at the same site. A few more mouse-clicks and you can arrange delivery from some dealers. You'll have to leave the house to drive your new car, though.

Rent, Don't Buy

IF ALL YOU WANT to do is rent a car, that too is possible on the Web. Alamo's new site at www.goalamo.com lets you make your own arrangements. Tell it where you're going, when you'll arrive and depart, and what kind of car you want; the site checks availability and reports back. I entered all my information, waited 5 or 6 minutes—and then lost my online connection. I eventually got through, but the experience gave me a new understanding of those surly teens who answer the phone at car rental outfits. —**Christina Wood**

ILLUSTRATION: MARC ROSENTHAL

Secretly

catch your **mother-in-law** on **video** vacuuming with a hula hoop while singing satanic **polka** songs. Convert it to an e-mail & **send it** to her church social director's computer.

Plug one end of the QuickVideo Transport into your PC's external parallel port and the other into any video source (like a camcorder or VCR, for instance) and WHAM! You're ready to capture full motion video (snapshots, too) and instantly put 'em in your PC. • Once you have them, you get to use all the software we've included to create cool video clips. You can edit, add great special effects, put in music and voice-overs, morph, and a whole lot more. • Then, if you want, use our exclusive Videogram Creator software to send your video or snapshots with voice-overs to any PC in the world via e-mail or the Internet. • Now get this: the people you send it to don't need anything special to play it back. • The QuickVideo Transport makes it all easy, fast, and simple. • Think about this: do you want to create and send full motion videos or be limited to a still-picture-snapshot thing? • Buy the QuickVideo Transport at the place where you buy all your computer gear.

Check out our website at **www.alaris.com** or call **510-770-5700** Ext. 2666.

CHECK IT OUT

	QVT	SNAPPY
Full Motion Video	☑	☐
Still Image "Snapshots"	☑	☑
Snapshots w/voice	☑	☐
Videogram Creator	☑	☐
Image Effects & Morph	☑	☑
Video Conferencing	☑	☐
Parallel Port Connect	☑	☑

QuickVideo
TRANSPORT
(Not that you would, but you could.)

alaris®
Technology For Real People

TigerDirect
1-800-888-4437

COMPUSA DIRECT
1-800-669-4727

MicroWAREHOUSE
1-800-367-7080

CDW
1-800-800-4239

MICRO CENTER
THE COMPUTER DEPARTMENT STORE™

Alaris, the Alaris Logo, QuickVideo and Videogram are trademarks of Alaris Incorporated. © 1997 Alaris Incorporated. All rights reserved.
All other trademarks are property of their respective companies.

Circle 38 on reader service card

OBSIDIAN™

"...Obsidian is the best of the first-person perspective Myst-like adventure games."
—Online Gaming Review

"...Obsidian *is* the best graphics adventure I've seen since Myst."
—PC Games

"...Obsidian is ingenious and one of the best realized CD-ROMS I've seen."
—Business Week

"...one of the finest adventure games of all time."
—HomePC

Lilah and Max, Ecological Scientists, stumble upon a mysterious black rock that grows from 3 to 50 feet in just 3 days. Naming this oddity "Obsidian", they unwittingly learn that it is some kind of doorway, but to what...?

THE FOREST REALM

Max is unwillingly drawn inside the "Obsidian". Your search for him sends you on an incredible journey.

5 CD'S OF INCREDIBLE GAMEPLAY

THE BUREAU REALM

The bureaucratic red tape administered by Vidbots will literally have you climbing the walls. Is this reality or merely a dream?

Is this statue more than a decorative element? Perhaps Atlas holds the key to your escape.

THE SPIDER REALM

This giant mechanical spider may lead you to Max, but are you better off with the spider alive or dead?

5 FANTASTIC REALMS

THE BISMUTH REALM

To find Max you'll have to help the enigmatic junkman, Bismuth. To save Max, you must stop him.

Play a game with Bismuth in this floating piazza. But remember–nothing is as it seems, and in Obsidian, nothing is just a game.

THE CONDUCTOR REALM

Your journey culminates in a showdown with the intelligence behind these bizarre events. The fate of the world is up to you.

OVER 50 HOURS OF INTRIGUE

Circle 130 on reader service card

For consumer service contact us at 1-888-SEGASOFT or visit www.segasoft.com

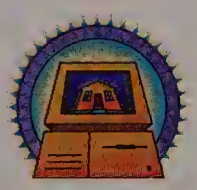
PC WORLD

TOP 5 HOME PCs

	SYSTEMS	Street price (7/1/97)	Overall rating	PC WorldBench score	Reliability/ service rating	Setup rating	Comments	Reader service number
1	Dell Dimension XPS M233s 800/388-8542 www.dell.com	$2379	90	242 outstanding	best/ best	fair	**FEATURES:** Pentium MMX-233, 32MB of SDRAM, 4.3GB hard drive, 16X CD-ROM drive, 33.6-kbps fax-modem, Iomega Zip drive, 17-inch monitor. Includes Microsoft Office 97 Small Business Edition and Encarta 97 or Bookshelf 97. **PRO/CON:** Reasonably priced, meaty hardware; limited software bundle, mail-order only.	611
2	Gateway 2000 G5-200M 800/846-2000 www.gateway.com	$2129	85	239 outstanding	fair/ best	outstanding	**FEATURES:** Pentium MMX-200, 32MB of RAM, 3.1GB hard drive, 24X CD-ROM drive, 56-kbps fax-modem, 17-inch monitor. Includes Microsoft Office 97, Pod, Third Dimension, Ultimate Human Body 2.0, Quicken SE, Money 97, and Encarta 97. **PRO/CON:** Cheap and very fast; mail-order only, so-so reliability rating.	612
3	Micron Millennia MME 800/223-6571 www.micron.com	$2689	85	241 outstanding	good/ best	good	**FEATURES:** Pentium MMX-233, 32MB of RAM, 3.2GB hard drive, 24X CD-ROM drive, 56-kbps fax-modem, Iomega Zip drive, 17-inch monitor. Includes Microsoft Office 97 Small Business Edition, Adobe PhotoDeluxe, Apache Longbow, Mercenaries 3D, and Command and Conquer. **PRO/CON:** Very fast; mail-order only, slightly expensive.	613
4	Quantex QP6/200 SM-2 800/896-4898 www.quantex.com	$2199	84	225 very good	fair/ best	fair	**FEATURES:** Pentium Pro-200, 32MB of RAM, 3.1GB hard drive, 12X CD-ROM drive, 33.6-kbps fax-modem, 17-inch monitor. Includes Corel WordPerfect Suite 7 and Compton's Interactive Encyclopedia. **PRO/CON:** Fast, suited to home office tasks and family fun, great price; no MMX support, mail-order only.	614
5	Micron Millennia XRU 800/223-6571 www.micron.com	$3999	81	263 outstanding	good/ best	outstanding	**FEATURES:** Pentium II-266, 64MB of RAM, 6GB hard drive, DVD-ROM/20X CD-ROM drive, 56-kbps fax-modem, Iomega Zip drive, 19-inch monitor, Microsoft Sidewinder joystick, 3D video card with 4MB of RAM. Includes Office 97, PhotoDeluxe, and Silent Steel (DVD). **PRO/CON:** Speed whiz; very pricey, mail-order only.	615

Best Buy — All products: 902

HOW WE TEST The overall rating is based on reliability and service (40 percent), price (20 percent), PC WorldBench performance (20 percent), setup (10 percent), and extra features (10 percent). Reliability and service ratings are based on results of *PC World's* Reliability and Service survey.



THREE BRAND-NEW MACHINES made mincemeat of our PC WorldBench tests this month. Two of them, the Millennia XRU and Millennia MME, are from Micron; the XRU posted the fastest score we've ever seen in the Top 5 Home PCs. The third system is Gateway 2000's fast and inexpensive G5-200M.

Despite all these newcomers, Dell's Dimension XPS M233s leads the pack for the second month in a row, thanks to a reasonable price and first-class reliability and service ratings. With its meaty hardware bundle, the M233s serves well as a powerful home office system. But don't expect a multitude of software titles—you get only Microsoft Office 97 Small Business Edition and Encarta 97 or Bookshelf 97.

New at number two is Gateway's G5-200M with its low price of $2129. This fast Pentium MMX-200 comes with 32MB of RAM, a 3.1GB hard drive, a 56-kilobits-per-second fax-modem, and a 17-inch monitor. Software includes Microsoft Office 97, Encarta 97, Ultimate Human Body 2.0, and Quicken SE. It's ideal for a home office or for family entertainment.

Micron's new Millennia MME comes in at number three. It sports a Pentium MMX-233 processor, 32MB of RAM, a 3.2GB hard drive, and a 17-inch monitor. It's also very fast, but slightly pricey at $2689. Software includes Office 97 Small Business Edition and games. It's another excellent choice if you want a home machine for work or fun.

Moving up to number four is Quantex's Pentium Pro 200–based QP6/200 SM-2. Hewlett-Packard's Pavilion 5320 loses this spot because HP's service rating dropped and Quantex's improved. Suitable for a home office, the QP6/200 offers very good performance at an affordable $2199. But gamers note—this is not an MMX PC.

If gaming *is* your passion, then Micron's ultraspeedy Millennia XRU is for you. Its thunderbolt PC WorldBench score of 263 is a full 21 points ahead of the next fastest PC, Dell's Dimension XPS M233s. The XRU is also ultraexpensive at $3999, but it's loaded with features: a Pentium II-266 chip, 64MB of RAM, a 6GB hard drive, and a joystick. It's also the first PC on our chart with a DVD-ROM drive and a 19-inch monitor. Check out those DVD movies on that big screen. Whew!

—*Kirk Steers*

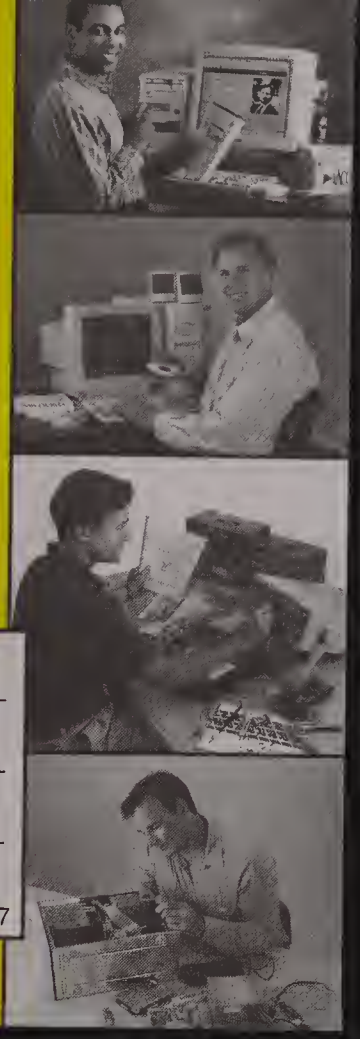
GATEWAY'S G5-200M has super speed at a very affordable price.

Kirk Steers is a contributing editor for PC World. *Testing performed by Ulrike Diehlmann of the PC World Test Center.* ■

SEND FOR FREE CATALOG!

☑ Check one FREE career catalog only.

- ☐ **Microcomputer Servicing** NEW!
- ☐ Industrial Electronics & Robotics
- ☐ TV/Video/Audio Servicing
- ☐ Basic Electronics
- ☐ Networking with Windows NT
- ☐ Computer-Aided Drafting
- ☐ Electronic Music Technology
- ☐ Computer Programming
- ☐ Telecommunications
- ☐ Multimedia Programming
- ☐ Desktop Publishing with PageMaker
- ☐ Introduction to PCs and the Internet
- ☐ PC Applications Specialist
- ☐ Computer-Based Bookkeeping
- ☐ Visual Programming in C++
- ☐ Mastering Microsoft Office
- ☐ Air Conditioning/Refrigeration/Heating
- ☐ Electrician
- ☐ Building Construction
- ☐ Home Inspection
- ☐ Auto Servicing
- ☐ Writing



Name (Please Print) Age

Street (No P.O. Box numbers please)

City State Zip

A Division of The McGraw-Hill Companies

Accredited Member, Distance Education and Training Council

0141-1097

For career courses approved under G.I. Bill, ☐ check for details

CARD E

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO 10008 WASHINGTON D C

POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
4401 CONNECTICUT AVENUE NW
WASHINGTON DC 20078-3543

PREPARE FOR A+ CERTIFICATION

A world of opportunities in computer service awaits you.

Hands-on computer knowledge can empower you and jump-start your career. Only NRI at-home training gives you the skills and equipment you need to succeed.

No matter what your background, you can be a computer service technician. NRI's highly acclaimed Discovery Learning method will guide you step-

by-step from the basics of electronics to advanced computer servicing techniques. You learn how to keep today's sophisticated PCs running at peak performance while gaining confidence to move up on the job, start a new career, or open your own business.

Best of all, you get one-on-one support throughout your course. You can reach your instructor via fax, phone, mail, or modem. With our exclusive Online Connection, you can even attend online seminars, download information, and much more!

■ You train with and keep a Pentium® 200 PC with 16 meg RAM, SuperVGA color monitor, 1.6 gigabyte hard drive, 33,600 baud fax/modem, 8X CD-ROM drive, Windows 95, Netscape Navigator, and more. Or, you can choose an even more feature-packed system through NRI's PC Options Plan.

■ You master computer diagnostics with self-booting ForeFront Troubleshooter™ software and CD-ROM.

■ You prepare for coveted industry certification with NRI's A+ Certification Test Prep on CD-ROM.

As the demand for computer service technicians increases, you'll have the skills, experience, and confidence to take advantage of those high-paying opportunities.

Call our toll-free number for your **FREE CATALOG,** or log on to **http://www.mhcec.com.**

1-800-321-4634, Ext. 2794

CALL, FAX, OR SEND TODAY FOR YOUR FREE NRI CATALOG!

NRI Schools
4401 Connecticut Avenue, NW, Washington, DC 20008

For career courses approved under GI Bill, ❑ check here for details.

✔ Check one FREE catalog only

- ❑ MICROCOMPUTER SERVICING
- ❑ Computer Programming
- ❑ TV/Video/Audio Servicing
- ❑ Desktop Publishing with PageMaker
- ❑ PC Applications Specialist
- ❑ Networking with Windows NT
- ❑ Bookkeeping and Accounting
- ❑ Visual Programming in C++
- ❑ Mastering Microsoft Office
- ❑ Introduction to PCs and the Internet

Name _____ Age _____

Address _____

City _____ State _____ Zip _____

A Division of The McGraw-Hill Companies

Accredited Member, Distance Education and Training Council

0141-1097

Today's Target: Microsoft

EXCITING NEWS: Microsoft just purchased the entire calendar year of 1998. The company is also buying Texas. And Bill Gates is running for President. That's all true—at least according to the zillions of Microsoft jokes floating around the Internet.

Everyone picks on the software giant. Well, back up the dump truck, folks, it's an easy target. It wasn't always that way. Microsoft—and Uncle Bill—used to be my heroes. I admired their entrepreneurial, guerrilla-marketing style; I even emulated them in my seminar business. But the company has grown arrogant and overbearing, with a cavalier attitude toward its bugs (a verboten word in Redmond) and a take-no-prisoners approach toward its competitors. (There, I've said it. Lightning didn't strike and I feel lots better.)

I have plenty of examples of Microsoft bugs and a few workarounds.

One thing that ticks me off is the bloated software. Listen, it's not your hard drive, Bill, it's mine! (Unless, of course, you bundle a hard drive with your software.) Office 97—at a minimum—gobbles up about 120MB of hard disk space.

Even if I go along with the "you want features, it takes room" argument, how about this: Microsoft's Picture It photo editing program snapped up 30MB on my hard drive without even saying please. The next version is expected to hoard 45MB. I'm sorry, Bill, but that's just plain rude.

Next? If you're going to do something stupid to slow down my productivity, let me know right away. I'm talking about the interaction between Outlook and Word 97. Here's what happens: Every time I close a file in Word, it takes 5, sometimes 7 seconds. I can see the "save" lines showing me that the file's saving. That's fast. Closing is slow.

The problem? Outlook creates journal entries every time a file is closed in Excel and Word. That is by *default*, even if, like me, you're not using Outlook. (Worse things happen if you do use Outlook; see this month's *Answer Line*.) It's an example of Microsoft's tomfoolery I can do without. (To fix it in Outlook's Tools menu, click *Options•Journal*, clear all the check boxes in the 'Also record files from' list, and click *Apply*.) Since I dumped those journal links, files in Word close faster than I can crash a 747 in Flight Simulator.

> Microsoft has grown **arrogant** and overbearing, with a **cavalier** attitude toward its **bugs.**

Don't even think of stopping me; this is feeling just too good.

Another thing that drives me wild is the company's insular perspective. I complained to one Microsoft representative about program bloat. My suggestion—pretty obvious, I thought—was to leave unnecessary program files on the CD-ROM. "Now *that's* a good idea," she said. Hello?

Microsoft also has a way of blaming *me* for not being able to deal with *its* bugs. By now you're probably aware that users of older Word versions couldn't read files saved in the first release of Office 97. (A patch is available at www.microsoft.com/officefreestuff.) For more in the same vein, check out *Full Disclosure*, September.

But when company reps were confronted about this at a user group demo of Office 97, they did a little song and dance. "We haven't educated the end user correctly," they lobbed into the audience. "There's a conversion utility on the Web site," they appealed pathetically as we pelted them with rotten tomatoes. Hey, guys, fess up.

MOUSING AROUND

WANT ANOTHER example of Microsoft isolationism? A few months ago, I raved about how good the company's IntelliMouse is, and I still feel that way. (See *Home Office*, February.) The problem, I pointed out, was Microsoft's contemptuous attitude toward those still using its older products. It made the IntelliMouse's features available only to users of a few third-party applications and of its newer products—the Office 97 suite, Publisher 97, Encarta 97, and so on. Some people cynically say it's a ploy to get customers to upgrade.

I'm delighted to report that some bright folks at Plannet Crafters came up with a solution to the IntelliMouse problem. It's a $10 mouse driver called Flywheel. If you use the IntelliMouse, you'll love Flywheel; it makes the mouse work with everything I've tried. Download a trial copy at www.plannetarium.com.

I'm not finished with Microsoft yet. Next month I have a few stunning add-ons for Word 95 and 97 and a way to make Windows 95 crash less. Plus a few more bones to pick.

Flywheel

$10; Plannet Crafters; 770/752-5416 (fax); www.plannetarium.com

READER SERVICE NO. 636

Contributing Editor Steve Bass is a licensed marriage and family therapist and is the president of the Pasadena IBM Users Group. See page 14 for contact information. ■

microsoft
office 97

everything
else

where can't you go today?

Way to go Microsoft! Office 97 is packed with hot new features that make it number one. But those same features make Office 97 file formats incompatible with previous versions of Office. Or with just about anything else for that matter.

Is this a dead end or what?

Conversions Plus to the rescue.

st in the nick of time, there's new **Conversions Plus**® **4.0** to take care of all your Office 97 file nversion needs. From DataViz, the file compatibility experts. Loaded with over 1,000 file translation ombinations, **Conversions Plus** translates hundreds of word processing, spreadsheet, graphic d database file formats. Quickly and accurately. Between many different Windows programs or tween Windows and Macintosh. New **version 4.0** also includes **e-ttachment Opener**™, an azing program which converts garbled e-mail attachments into their original file formats. And **acOpener**®, a nifty utility for reading and writing Macintosh disks on your PC.

w's that for a set of tools to get you where you want to go. Today.

For details, call ***1.800.270.0030 ext.118*** *or visit our web site at http://www.dataviz.com/CPW7*

And find out for yourself that with DataViz, there are no dead ends.

Runs on Windows 3.1, Windows 95 and Windows NT.

DATAVIZ

Available at these locations. COMPUSA EGGHEAD SOFTWARE MICRO CENTER

l product names are trademarks of their respective holders.

Circle 80 on reader service card

Training Videos for Windows Software™

KeyStone Learning Systems Corp.

Microsoft SOLUTION PROVIDER

Alison Balter
Microsoft Certified
& Access Instructor

Robert MacHale
Professional Trainer
& Internet Instructor

Dawn Bjork
Microsoft Certified
& Word Instructor

NEW Access 97*

Beg/Int/Adv	(ea) $49.95
Special-All Three	$129.95
Develop. Lev 1/2/3	(ea) $89.95
Develop. Lev 4/5/6	(ea) $89.95
ODE Tools	$89.95
Access & the Internet	$89.95
Access Enterprise	$89.95
Special-All Nine	$649.95

NEW Windows NT 4.0*

Server Admn. Lev 1	$89.95
Server Admn. Lev 2	$89.95
Covers Exam 70-67	
Enterp. Admn. Lev 1	$89.95
Enterp. Admn. Lev 2	$89.95
Covers Exam 70-68	
Special All Four	$329.95
Serv. & Wrk. Install	$89.95
Covers Exam 70-63 & 70-73	
Workstn. Admn. Lev 1	$89.95
Workstn. Admn. Lev 2	$89.95
Workstn. Admn. Lev 3	$89.95
Covers Exam 70-73	
Special All Four	$329.95
Workstn. User Level 1	$49.95
Workstn. User Level 2	$49.95
Both Videos	$89.95
Special All Ten	$669.95

NEW IIS 3.x

Level 1/2/3	(ea) $89.95
Special-All Three	$249.95
Covers Exam 70-77	

NEW TCP/IP for NT 4.x

Level 1/2/3	(ea) $89.95
Special-All Three	$249.95
Covers Exam 70-53	

NEW Internet Explorer 3.x*

Internet Explorer 3.x	$49.95

NEW Front Page 97

Level 1	$89.95
Level 2	$89.95
Level 3	$89.95
Special-All Three	$249.95

Java

Level 1/2/3	(ea) $89.95
Level 4/5/6	(ea) $89.95
Special-All Six	$449.95

NEW Visual J++ 1.x

Level 1/2/3	(ea) $89.95
Level 4/5/6	(ea) $89.95
Special-All Six	$449.95

KeyNotes Free HTML

Level 1	$89.95
Level 2	$89.95
Level 3	$89.95
Special-All Three	$249.95

NEW ActiveX/Automation

Level 1/2/3	(ea) $89.95
Level 4/5/6	(ea) $89.95
Special-All Six	$449.95

NEW Visual Basic 5.0*

Level 1/2/3	(ea) $89.95
Level 4/5/6	(ea) $89.95
Client/Srv. Dev. Lev. 1	$89.95
Client/Srv. Dev. Lev. 2	$89.95
Multi-Tier Develop.	$89.95
ActiveX/Automation	$89.95
ActiveX/Controls	$89.95
Special-Any Three	$249.95
Special-All Eleven	$769.95

NEW Word 97*

Beg/Int/Adv	(ea) $49.95
Mail Merge	$49.95
Forms/DTP	(ea) $49.95
Internet	$49.95
Special-All Seven	$279.95

NEW Outlook 97*

Basics	$49.95
Power Features	$49.95
Special-Both Videos	$89.95

NEW Excel 97*

Beg/Int/Adv	(ea) $49.95
Power Features	$49.95
Pivot Tables	$49.95
Shortcuts & Ideas	$49.95
Special-All Six	$239.95

KeyNotes Free Windows 95*

Beg/Int/Adv	(ea) $49.95
Network/Install	(ea) $49.95
Special Features	$49.95
Special-Any Three	$129.95
Special-All Six	$239.95

NEW PowerPoint 97*

Beg/Int/Adv	(ea) $49.95
Special-All Three	$129.95

KeyNotes Free Project 4.1*

Level 1/2/3/4	(ea) $89.95
All Four Videos	$299.95

Over 500 Titles

Average: 2 hours of training per video

Ask about KeyNotes™ $14.95 ea — KeyStone's Quick Reference

Domestic Shipping 2-3 Days: $5.00 for the first two videos; plus $1.50 for each additional video tape. International Orders: Shipping cost will vary, call for details.

All Videos Available in PAL (European Format)

* Other versions available
Prices and course may vary

Office 97 VIDEO COMBINATIONS

$19.95 MS Office Integration Video with any Combo purchase

Microsoft SOLUTION PROVIDER

Microsoft Office Plus ..... $579.95 (with KeyNotes $749.95)
- 3 Word, 3 Excel, 3 Access (Beg/Int/Adv)
- 3 PowerPoint, 3 Windows, (1 Outlook or 1 Mail)
- 16 videos with over 29 hours of training

Microsoft Office Pro ..... $495.95 (with KeyNotes $639.95)
- 3 Word, 3 Excel, 3 Access (Beg/Int/Adv)
- 3 PowerPoint, (1 Outlook or 1 Mail)
- 13 videos with over 24 hours of training

Microsoft Office Standard ..... $349.95 (with KeyNotes $469.95)
- 3 Word, 3 Excel, 2 PowerPoint, 1 Outlook
- 9 videos with over 17 hours of training

Developer Visual Studio VIDEO COMBINATIONS

Visual C++ $449.95
Level 1, Level 2, Level 3
Level 4, Level 5, Level 6

Visual J++ $449.95
Level 1, Level 2, Level 3
Level 4, Level 5, Level 6

Visual Basic.....$449.95
Level 1, Level 2, Level 3
Level 4, Level 5, Level 6

Visual FoxPro.....$449.95
Level 1, Level 2, Level 3
Level 4, Level 5, Level 6

Visual InterDev ...$449.95
Level 1, Level 2, Level 3
Level 4, Level 5, Level 6

30 Videos Save $800 — $1,899.95

Corel Suite 8 VIDEO COMBINATIONS

Corel Office Professional $579.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 3 Paradox, 1 Netscape Nav., 1 Envoy, 2 Groupwise
- 16 videos with over 29 hours of training

Corel WordPerfect Suite Professional $495.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 1 Envoy, 3 Windows
- 13 videos with over 24 hours of training

Corel WordPerfect Suite Standard $349.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 9 videos with over 17 hours of training

COREL SOLUTION PARTNERS

4 Easy Ways to Order:

CALL ▶ 1-800-976-1040
801-375-8680

FAX ▶ 1-801-373-6872

WWW ▶ www.klscorp.com

MAIL ▶ KeyStone Learning Systems Corp.
2241 Larsen Parkway • Provo, UT 84606

AD# PW107

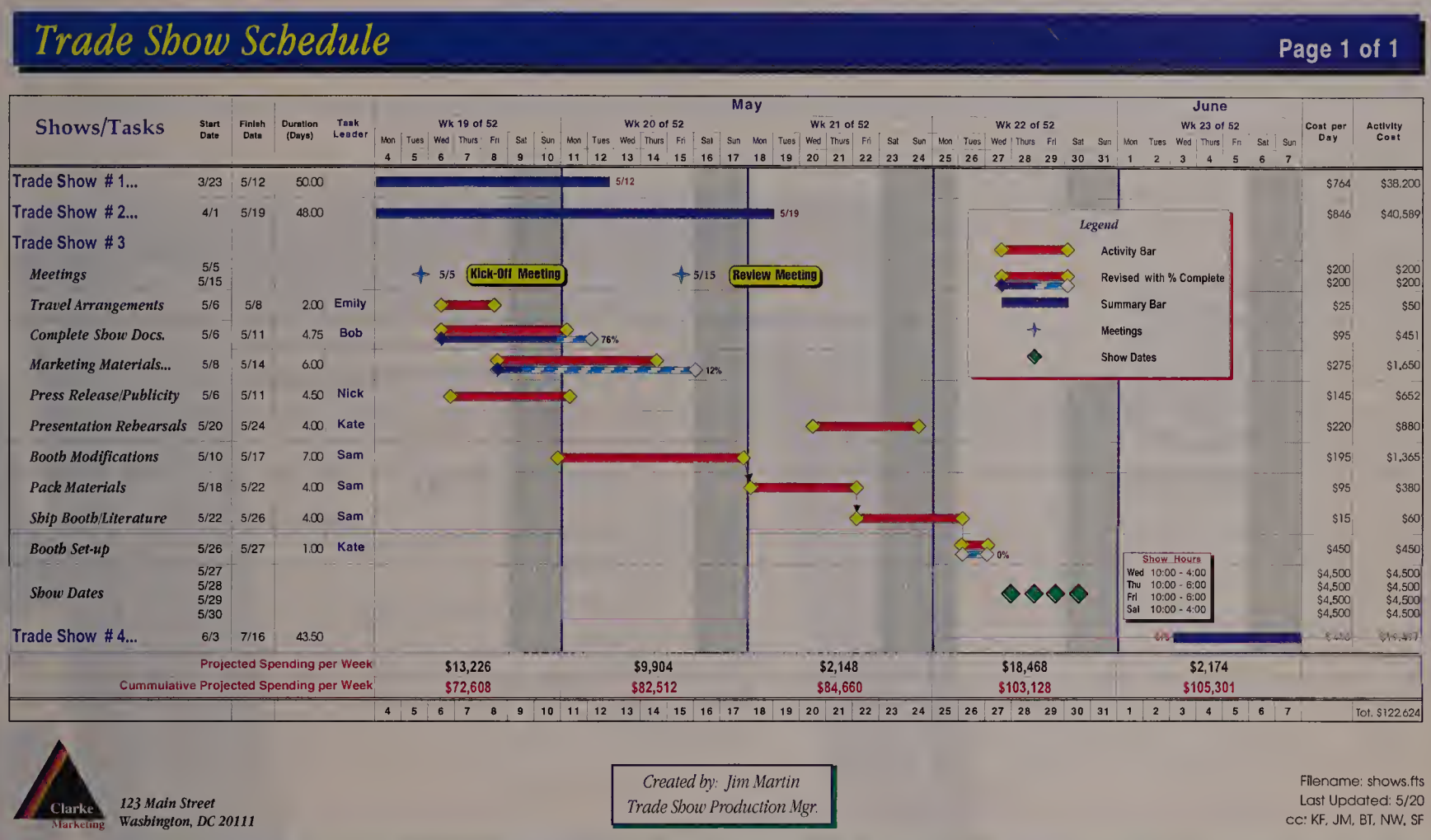
RISK FREE 30 DAY Money Back Guarantee

We accept C.O.D., Company P.O. or check +

Circle 123 on reader service card

Project Scheduling Made Easy.

New Version 5.0



It's easy to use. FastTrack Schedule is intuitive and flexible, meeting all your project scheduling needs. It works how you do, letting you schedule projects quickly, easily, but with the control your projects require. You don't have to be an expert in project management to keep your projects organized; you just need the right tool to get it done. It's that simple.

FastTrack Schedule™

It's easy to learn. Can you afford to waste time learning software over and over again? Now you don't have to. With online help systems, tool tips, and bubble help, you'll have quick solutions at your fingertips. And with FREE and UNLIMITED technical support, you'll always stay on track.

Simple Scheduling. Impressive Power.

MONEY BACK GUARANTEE 30 DAY

It's easy to buy. We give you a free demo to try the software. If you like it, call us and we'll activate your demo on the fly. Plus FastTrack Schedule is 1/3 of the cost of most project management software, so it will fit your budget as well. Call today for a free demo or download it from our web site!

Get on track!

Call to order, for more information or download a FREE DEMO today!

(800) 450-1984

http://www.aecsoft.com

Here are just some of the new features you'll find in Version 5.0:

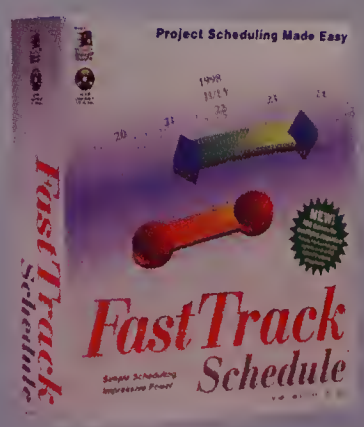
- Calculation Fields
- Time Period Summaries
- Choice Lists
- Legend Builder
- Column Summaries
- Export directly to HTML, GIF, JPEG
- Copy Page vs. Copy Schedule
- Right-Clicking
- Finish-to-Finish Linking

plus many more...

Upgrade to Version 5.0 Today!

Designed for Microsoft Windows NT Windows 95

yes It runs with NetWare



AEC Software, Inc., 22611-113 Markey Ct., Sterling, VA 20166, USA • Phone (703) 450-1980 • FAX (703) 450-9786 • http://www.aecsoft.com

©1997 AEC Software, Inc. All rights reserved. Windows, Windows 95 and Windows NT are registered trademarks or trademarks of Microsoft Corporation. Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.

Circle 14 on reader service card

Expand Your

(without collapsing your

SOUNDX 5500

Capabilities!

checkbook)

When it comes to number crunching, data processing, information storing, graphics generating, presentation blasting performance, Sceptre notebooks rock!

These Sceptre notebooks, from the extreme-performance/extreme-value S4500 featuring a 166 MHz Intel Pentium® Processor with MMX™ technology to the ultra extreme-performance S5500 featuring a 233 MHz Intel Pentium® Processor with MMO™ (Intel Mobile Module) technology, come with these features:

SOUNDX 5500	SOUNDX 5000	SOUNDX 4500
• 233 MHz Pentium® Processor with MMO™ Technology • 13.3" TFT XGA Display • 48MB RAM (144MB Max.) • 512KB L2 Pipeline Burst Cache • 3.0 GB Hard Drive • Options Bay with 16X CD-ROM or 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery • Supports ZV port. Card Bus technology • PCI Bus with 128-bit Graphics Accelerator (16.7 M True Colors) • Touchpad / 6.2 lb.	• 233 MHz Pentium® Processor with MMO™ Technology • 12.1" TFT SVGA Display • 32MB RAM (144MB Max.) • 512 KB L2 Pipeline Burst Cache • 2.0 GB (Up to 3.0 GB) Hard Drive • Options Bay with 16X CD-ROM or 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery • Supports ZV port, Card Bus technology • PCI Bus with 128-bit Graphics Accelerator (16.7 M True Colors) • Touchpad / 6.2 lb.	• 166 MHz Pentium® Processor with MMX™ Technology • 12.1" TFT SVGA Display • 16MB RAM (80MB Max.) • 256KB L2 Pipeline Burst Cache • 2.0GB (Up to 3.0GB) Hard Drive • Options Bay with 12X CD-ROM / 3.5" FDD Module (concurrent use) or Optional 2nd Lithium Ion Battery • Supports ZV port.Card Bus technology • PCI Bus with 128-bit Graphics Accelerator (64K Colors) • Touchpad / 6.9 lb.
$4,999	**$3,999**	**$2,999**

- Intel low voltage mobile TCP Processor and system controller chipsets
- 2 Type II / 1 Type III PCMCIA slots
- Built-in stereo sound
- 9-cell Lithium-Ion battery with built-in remaining life indicator
- Microsoft Windows 95 installed
- Industry standard security lock ready
- IrDA 1.0 Standard compliance
- One year warranty

Options for Your Soundx

- 33.6k Fax/Modem
- IO port replicator
- Auto hot docking station
- Extended warranty

To get you hands on one of these capability expanding machines so you too can rock, call:

888-580-5588

Check out our website at:
www.sceptretech.com

Circle 213 on reader service card

Surprised at your web hosting rates?!

Then call ValueWeb today, the world's most affordable web hosting service!

$19.95 MO

No Minimum Contract!

- Domain name registration provided (http://www.your_name.com/)
- Access to our SSL secure server
- Your own CGI-bin directory
- Anonymous Virtual FTP
- E-mail forwarding
- Your own FTP account
- T3 connection to the Internet
- 1000 Mb of data transfer per month
- Daily tape backup
- Choice of UNIX and Microsoft® Front Page
- Detailed web usage statistics
- Auto E-mail responders
- 25 Mb of disk space
- Truespeech® server support included (real time audio)
- Same day setup
- POP3 E-mail accounts

30 Day Money Back Guarantee!

ValueWeb℠

The #1 Choice for Professional Website Developers.

Ask about our reseller program!

1-800-W9E3-H4O6S7T8-U8

Save $10 When You Register Online! • www.valueweb.net • E-mail: sales@valueweb.net

Circle 260 on reader service card

YOU WOULDN'T LET YOUR BEETS GET **mixed up** WITH YOUR POTATOES

SO WHY LET YOUR **data** SLOP INTO THE **operating systems** ON YOUR HARD DISK?

NOW YOU CAN **organize** AND **protect** EVERYTHING ON YOUR HARD DISK WITH **PartitionMagic® 3.0!**

By dividing your hard disk into physically separate partitions, PartitionMagic lets you organize your hard disk to protect valuable data files from mixing with potentially sticky applications and operating systems. PartitionMagic also simplifies backups, especially to devices like ZIP™ drives, because you can just backup the partition containing the data you need. And with the move feature of PowerQuest MagicMover,™ you can move applications from one partition to another without losing a single setting, preference, or file. For more information, visit our Web site at **www.powerquest.com.**

"PowerQuest's PartitionMagic is our choice for repartitioning a large hard disk."
Brian Nadel, *PC Magazine*

"In less than five minutes, I not only divvied up my hard drive, but changed my mind and divvied it up again ... It's easy to use." **Steve Bass, *PC World***

Buy PartitionMagic 3.0 and get $15 back from PowerQuest.® Visit your local software reseller or call 1-800-720-0399 for details.

Babbagge's • Best Buy • CompUSA • Computer City • Egghead
Electronics Boutique • Fry's • J&R • Micro Center • Office Depot • Software Etc.

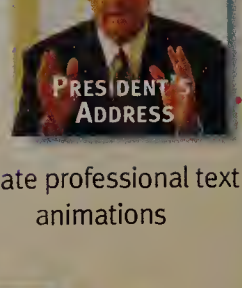
© 1997 PowerQuest Corporation. All rights reserved. PowerQuest and PartitionMagic are registered trademarks of PowerQuest Corporation. Patent pending.

Circle 191 on reader service card

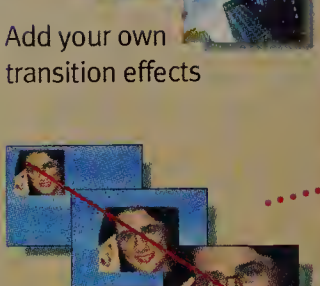
POWER® PQ QUEST

PC Video Made Easy!

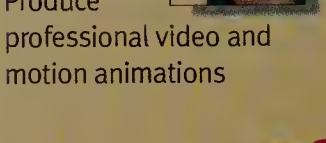
Revolutionary Video Publishing



Create professional text animations



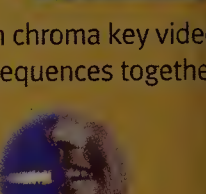
Add your own transition effects



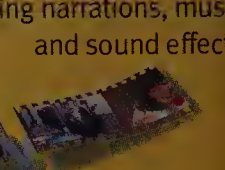
Produce professional video and motion animations

Intuitive easy-to-use interface lets you produce AVI, QuickTime, or MPEG movies

Multimedia library includes animations, videos, music, sound effects, photos, textures and more



You can chroma key video sequences together



Add audio studio effects including narrations, music and sound effects

Edit your videos

BONUS!

Produce MPEG movies with MGI VideoWave's built-in MPEG software encoder.

Add your own video effects

You can capture photo frames

July 1997
MGI VideoWave

Finalist

MGI VideoWave™

For more information, contact MGI Software Corp. at 1-888-MGI-SOFT or visit www.mgisoft.com (Priority Code:VW109) **Available at:**

Circle 142 on reader service card

MGI SOFTWARE®

Windows® 95 ready-to-run. †Estimated street price in U.S. dollars. ©1989-1997 MGI Software Corp. all rights reserved. MGI and MGI VideoWave are trademarks or registered trademarks of MGI Software Corp. Indeo is a trademark of Intel Corporation. All products mentioned are trademarks or registered trademarks of their respective companies.

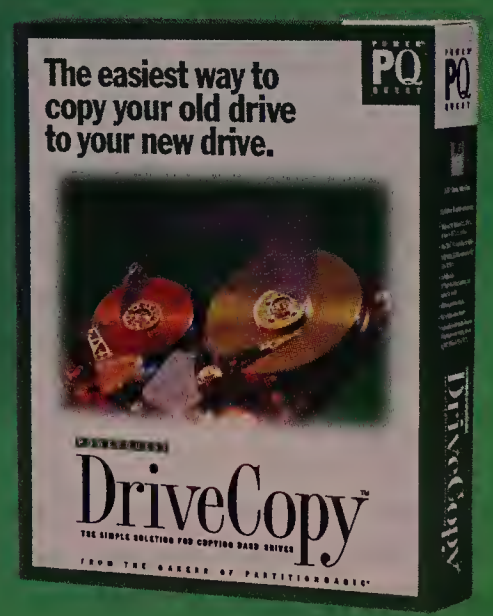
NOW.....

Copying EVERYTHING FROM YOUR OLD DRIVE TO YOUR new drive

IS THIS **easy.**

INTRODUCING **DriveCopy**,™ FROM POWERQUEST® — THE **safest**, **easiest**, AND MOST **affordable** WAY TO COPY YOUR OLD HARD DRIVE TO YOUR **new hard drive** IN MINUTES.

Remember when upgrading to a new hard drive was more painful than doing your income taxes and riskier than bungee jumping? Well, fortunately now there's DriveCopy, from PowerQuest. With a few simple steps, everything from your old hard drive is automatically copied to your new one without losing a single preference, setting, or byte of data. No re-installing, no data loss, no headaches. At just $29.95, DriveCopy makes upgrading to a new drive more affordable and convenient than ever. All of the most common operating systems are supported by DriveCopy, including all versions of Windows 95, NT, 3.x, DOS, and OS/2. For more information, visit our Web site at **www.powerquest.com**.



Try DriveCopy for 60 days. If you're not completely satisfied, return it to PowerQuest and get your money back. Visit your local software reseller or call 1-800-720-0399.

Best Buy • CDW • CompUSA • Computer City • Egghead • Electronics Boutique
Fry's • Future Shop • J&R Computer World • Micro Center • Office Depot

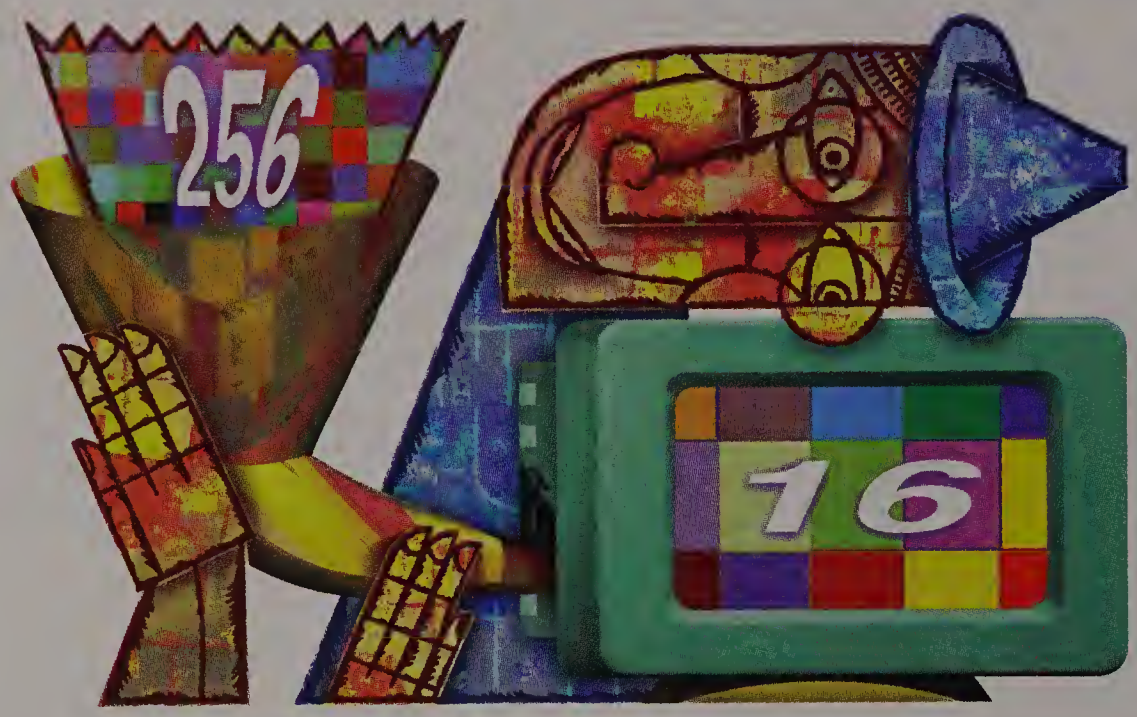
©1996 PowerQuest Corporation. All rights reserved. PowerQuest, PartitionMagic and DriveCopy are registered trademarks of PowerQuest Corporation. Patents pending.

FROM THE MAKERS OF PARTITIONMAGIC®

Circle 196 on reader service card

POWER® PQ QUEST

HERE'S HOW



ANSWER LINE

Eeny, Meeny, Miney, Mo' Colors on Screen

I HAVE A 486 with the graphics adapter built into the system board. I want to use a program that requires VGA graphics, but when I try to open it while using Windows 3.11's generic 16-color VGA driver, the program refuses, complaining that it requires 256 colors. I'm sure the adapter must support 256 colors. I've tried just about every 640-by-480 256-color driver I can find, to no avail. How do I find the right driver?

Anthony F. Wright, Internet

AS YOU DISCOVERED, just picking drivers at random doesn't work. Your best bet is to try to deduce exactly which video controller chip you have, then install the right driver for it. The easiest way to do this is to turn off the computer, then turn it back on. The first thing you should see on your screen, even before the BIOS version information shows up, is a message displayed by the video BIOS. This should tell you the video adapter or chip manufacturer, including the exact chip model.

Armed with that knowledge, you can try to track down a Windows 3.1 driver for that specific video adapter (usually available from the adapter manufacturer) or a generic driver for the chip (sometimes available from Microsoft or the chip manufacturer). If this information doesn't appear on the screen—or flashes by too quickly—you can also open the computer and inspect the system board. Most video controller chips are labeled. If you can't determine the chip manufacturer, try installing Microsoft's generic SVGA (640 x 480 x 256) driver, available online at Microsoft's FTP server (ftp.microsoft.com/softlib/mslfiles/svga.exe).

BLAME IT ON THE CD-ROM, OR ON THE DRIVE?

I HAVE TWO new CD-ROM based-programs that seem to be incompatible with my CD-ROM drive. I can insert the discs in the drive and even get a directory listing of their contents, but I can't install or run the programs listed. Windows just keeps telling me there is no disc in the drive. My old CD-ROMs still work fine, and I've even ordered replacement discs from the manufacturer, but they don't work either. Is it my circa-1991 CD-ROM drive, or the discs?

Phillips H. Fox, Port Lavaca, Texas

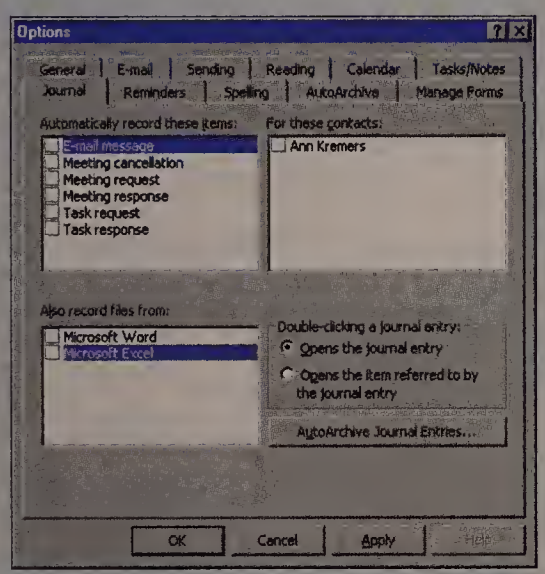
YOU'LL NEED TO pop them into another CD-ROM drive to find out for sure, but it's possible that the problem is in the CD-ROM disc. Your relatively ancient drive may have a hard time reading higher-density (74-minute) CD-ROMs or discs that mix audio and data tracks or contain a zero track. I've also read reports of people having difficulty reading CD-ROMs formatted using Microsoft's Joliet CD-ROM file system. Joliet extends the standard ISO 9660 CD-ROM file system to support Windows 95–style long file names. If the CD-ROM drive's contents include file names longer than 8 plus 3 characters, this could be your problem. On a related note, it's also very likely your drive will have trouble reading CD-Recordable discs (identifiable by their gold color).

Having said all that, it's much more likely that your drive is simply dirty, or tired. The laser it uses to read data from the CD-ROM has a lens that may have accumulated dust and other crud since it got its start back in the Bush Administration. Before you explore more expensive solutions, consider buying a CD lens cleaner at your local computer store. They usually cost less than $20, and consist of a disc fitted with gentle brushes that you pop into

By Scott Spanbauer

Speed Office 97 by Turning Off File Logging

HAVE YOU NOTICED that opening and closing your Word and Excel files takes longer since you upgraded to Office 97? The latest edition of the suite includes a new feature, enabled by default within Outlook, that logs all of your Word and Excel file operations. Unfortunately, this really slows things down. According to David Barton of Berkeley, California, the problem gets worse if you use macros that open and close several files. One of Barton's Excel macros that ran in 30 seconds in Office 95 took more than 40 minutes in Office 97. The solution is to turn this feature off: In Outlook, choose *Tools•Options*, select the *Journal* tab, and uncheck *Microsoft Word* and *Microsoft Excel* in the 'Also record files from:' box.



the drive for a minute or so. A coworker might even have one you can borrow.

If cleaning does no good, and the CD-ROM itself doesn't appear to be the problem, the prognosis goes from bad to worse. The drive's laser or motor is probably on its last legs, in which case your best move is to replace it. But this news isn't so bad—newer, speedier, and more capable drives are inexpensive.

REGISTRY REPAIR 101

WHENEVER I START Windows 95, I see a 'Registry Error' message, after which Windows asks me to click an OK button so that it can repair the Registry from a backup copy. Windows then restarts, but the next time I turn the computer on I get the same error.

Ketan Patel, Rutherford, New Jersey

NOTHING IS EASIER to mangle, and harder to fix, than the Windows Registry. Each time Windows 95 starts up, it creates backup copies of the Registry's system.dat and user.dat files. If the Registry becomes damaged, Windows 95 will try using the backup copies. Unfortunately, through the wonders of technology, it is possible for *both* copies of the files to become corrupted, which sounds like your situation.

Until recently, Registry repair tools have been pretty much nonexistent. I recommend that you try Helix Software's Nuts & Bolts system maintenance utility; it's not guaranteed to solve your problem, but it may help. In addition to disk management, crash-proofing, and security tools similar to those in Symantec's Norton Utilities, Nuts & Bolts offers a nice Registry repair tool that could get you booting smoothly again (see the figure on the next page). So does CyberMedia's First Aid 97.

If these utilities can't do the job, here's a last-ditch tactic. It's based on a file called system.1st, which is a copy of your Registry from the day you first installed Windows 95; you may have to reinstall hardware that you added after the initial Win 95 installation.

1. To remove the hidden, system, and read-only attributes of the file called system.1st in your computer's root directory, type the command **attrib -h -s -r system.1st** in a DOS window. Then copy system.1st to your \Windows directory (the command **copy c:\system.1st c:\windows** should do it, unless Windows 95 is installed in a different drive or directory).
2. Remove the hidden, system, and read-only attributes of the system.dat file by using this DOS command: **attrib -h -s -r system.dat.**
3. Delete system.dat, then rename system.1st to system.dat and reset the attributes using **attrib +h +s +r**.

When you restart Windows, you won't get the error message.

- **Nuts & Bolts $50 street; Helix Software; 800/451-0551, 718/392-3100, 718/392-4212 (fax); www.helixsoftware.com.**

READER SERVICE NO. 617

- **First Aid 97 $35 street; CyberMedia Inc.; www.cybermedia.com.**

READER SERVICE NO. 618

CONTENTS

ANSWER LINE
330 Get the right video driver, diagnose CD-ROM problems
331 Reduce file open and close time in Office 97, repair the Registry, speed Win 95 startup
333 Delete all of a program

WINDOWS TIPS
334 Get rid of unused program files, start each day with a new look and sound
336 Create your own icons
338 Replace Notepad, manage your Task Manager

SPREADSHEETS
342 Delete empty rows in one step, restore Excel 97 menus, bypass 1-2-3's splash screen

WORD PROCESSING
344 Change Word's background color, clean up e-mailed text
346 Reorder manually numbered items, work on two parts of a file at once

INTERNET TIPS
348 Guide to Microsoft's e-mail programs
350 Troubleshoot e-mail programs, check your Net connection's vital signs, update browsers

HARDWARE TIPS
352 Diagnose and fix laser printer problems

UPGRADE GUIDE
356 Install a CD-Recordable drive

INTERNET

DON'T MISS ADDITIONAL HERE'S HOW information at **www.pcworld.com/hereshow.html.**

SPEED WINDOWS 95 STARTUP

HERE'S A TIP that can save you time and money. After a couple of years of installing and uninstalling programs and peripherals, you may notice that it's taking longer to start up and shut down Windows 95. The problem is that hardware and software uninstall routines don't always clean up after themselves. As a result, Win 95's Registry gets bloated. Starting up and shutting down both involve reading and writing the Registry files (and their backups), which contributes to the slowdown. ▶

Make your own icons ◆ Download a Notepad replacement ◆ Train Task Manager

Track Down Unused Files

HOW DO YOU get rid of files left over from programs that you've removed? In the April issue, I listed a few tips to help you ferret them out (see "Unmasking Orphaned System Files"). That approach uses Windows Write, Quick View, or another file viewer to peek at the contents of system files. But Tomi Drpic, writing from Cochabamba, Bolivia, points out a better way—one that is faster, doesn't require additional software, and avoids the risk of accidentally corrupting a file with Windows Write.

In Windows Explorer (Windows 95) or File Manager (Windows 3.*x*), select a file

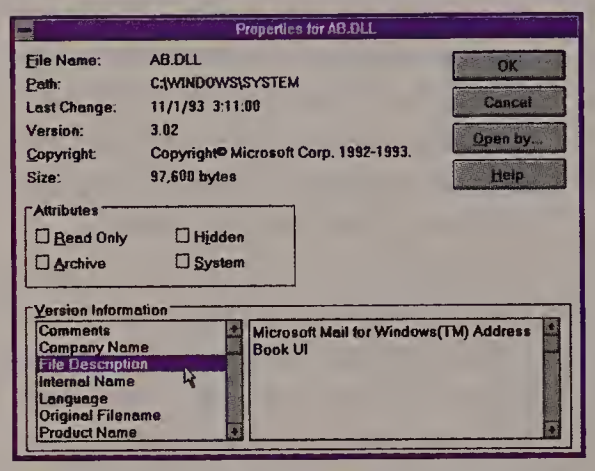


FIGURE 1: FIND THE IDENTITY of system files by taking a quick peek at the Properties dialog box.

you're curious about, such as a .dll file, then choose *File•Properties* (or press **<Alt>-<Enter>**). In Windows 95, look in the Properties dialog box for a tab called *Version*, and click it. In Windows 3.*x*, look for the Version Information at the bottom of the Properties dialog box (see **FIGURE 1**), and click on *Comments, Company Name, File Description*, and so on to find out more about the file. (If there's no Version tab or the Version Information box is dimmed, you're out of luck.)

Not all files will have an entry for Product Name, but sometimes just seeing the company name can tell you what program installed the file and therefore whether that file can be removed.

Move these outdated system files to a temporary folder or to a floppy disk and wait a while before deleting them to make sure they aren't needed by your system.

Happy housekeeping!

GIVE WINDOWS A NEW LOOK AND SOUND EVERY DAY

ONE DELIGHTFUL thing about Windows 95 is the way it lets you customize wallpaper, sounds, and other decorative elements to your liking. The problem is, nobody wants to look at the same picture or hear the same sound all the time.

To the rescue comes Richard Reynolds of Camp Springs, Maryland, with a simple, clever technique for changing the start-up screen automatically each time you start Windows 95. This routine can also cycle through different wallpaper files, sounds, and more. The trick is to make a batch file that renames each file in your collection of sounds (or bit maps) whenever your computer is started. That way, each sound or picture takes a turn. Reynolds's batch file, which I have modified slightly, is shown in **FIGURE 2**.

Let's take your start-up sound as an example. For best organization, put all your auxiliary sounds in one folder and rename them sound01.wav, sound02.wav, and so on. Next, assign a sound for your start-up: Choose *Start•Settings•Control Panel*, double-click the *Sounds* icon, select *Start Windows* in the Events list, then type a path and name for the sound file in the Name box. This file can be in any folder and have any name. (But store a copy of the file with the other sounds that you renamed, or you'll lose it.) Click *OK*.

```
cd\windows\my_wavs
ren sound01.wav soundxx.wav
ren sound02.wav sound01.wav
ren sound03.wav sound02.wav
ren sound04.wav sound03.wav
ren soundxx.wav sound04.wav
copy sound01.wav c:\windows\media\sound.wav
```

FIGURE 2: CHANGE START-UP SOUNDS automatically with a simple batch file like this one.

Next, make a batch file like the one in the figure. You may need to make a few adjustments: First, make sure the path in the first line reflects the location of your extra sound files. In addition, if you have more than four start-up sounds—say, eight—you'll have to modify the next-to-last line (change it to read **ren sound05.wav sound04.wav**), add more lines (one for each sound, following the pattern of the other lines), then add a line that reads **ren soundxx.wav sound08.wav**. You'll need to adjust the path and name of the sound file on the last line to reflect the one you designated in Control Panel.

Save this batch file with a name like **switcher.bat** in a folder where you keep other batch files (such as your Windows folder). To make the batch file run automatically each time you start your computer, choose *Start•Run*, type **notepad c:\autoexec.bat**, and click *OK*. To this file, add the line **call c:\windows\switcher.bat** (your path may differ). Then save the autoexec.bat file and exit Notepad.

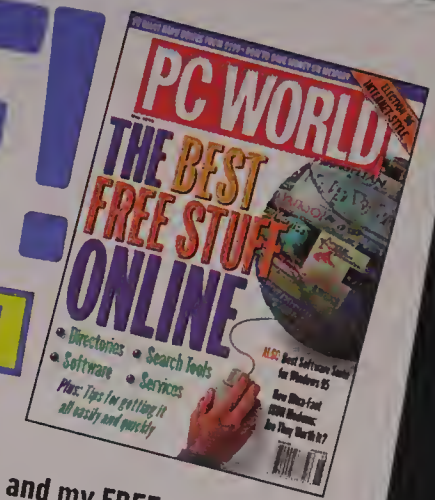
The batch file renames each of your sound files and then copies one of them to a location where Windows expects to find its start-up sound. Keeping your sounds (or bit maps) in a separate folder simplifies troubleshooting and keeps the target folder cleaner.

To use a similar batch file for changing wallpaper, follow the same steps, this time using the names of .bmp files and making sure the copy line overwrites the bit map currently selected in the Display Properties dialog box (choose *Start•Settings•Control Panel*, double-click the *Display* icon, click the *Background* tab, and select a Wallpaper from the list).

To make a batch file that constantly changes your Windows start-up screen, have the batch file overwrite the logo.sys file in the root folder of your start-up drive. (For details on customizing this file, see "Custom Start-Up Screens in Windows 95," *Windows Tips*, May.) Be aware that the more files your batch ▶

69% OFF!

Plus, get your FREE GIFT!



The PC WORLD FREE CD-ROM is loaded with over 60 Shareware programs, including:

- Applications • Video clips
- Utilities • Internet tools • Games

And it's yours absolutely FREE with your order of PC WORLD!

☐ **YES!** Rush me one year of PC WORLD and my FREE CD-ROM! I'll pay just $21.97 for 12 monthly issues, that's 69% off the regular newsstand rate.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Savings based on annual newsstand price of $71.40. Please allow 6 to 8 weeks for delivery of your first issue. Foreign orders add $46 postage. Canadian orders add $20 postage plus 7% GST (#R124669680).

4MQP5

Plug into PC WORLD Online now!
http://www.pcworld.com

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

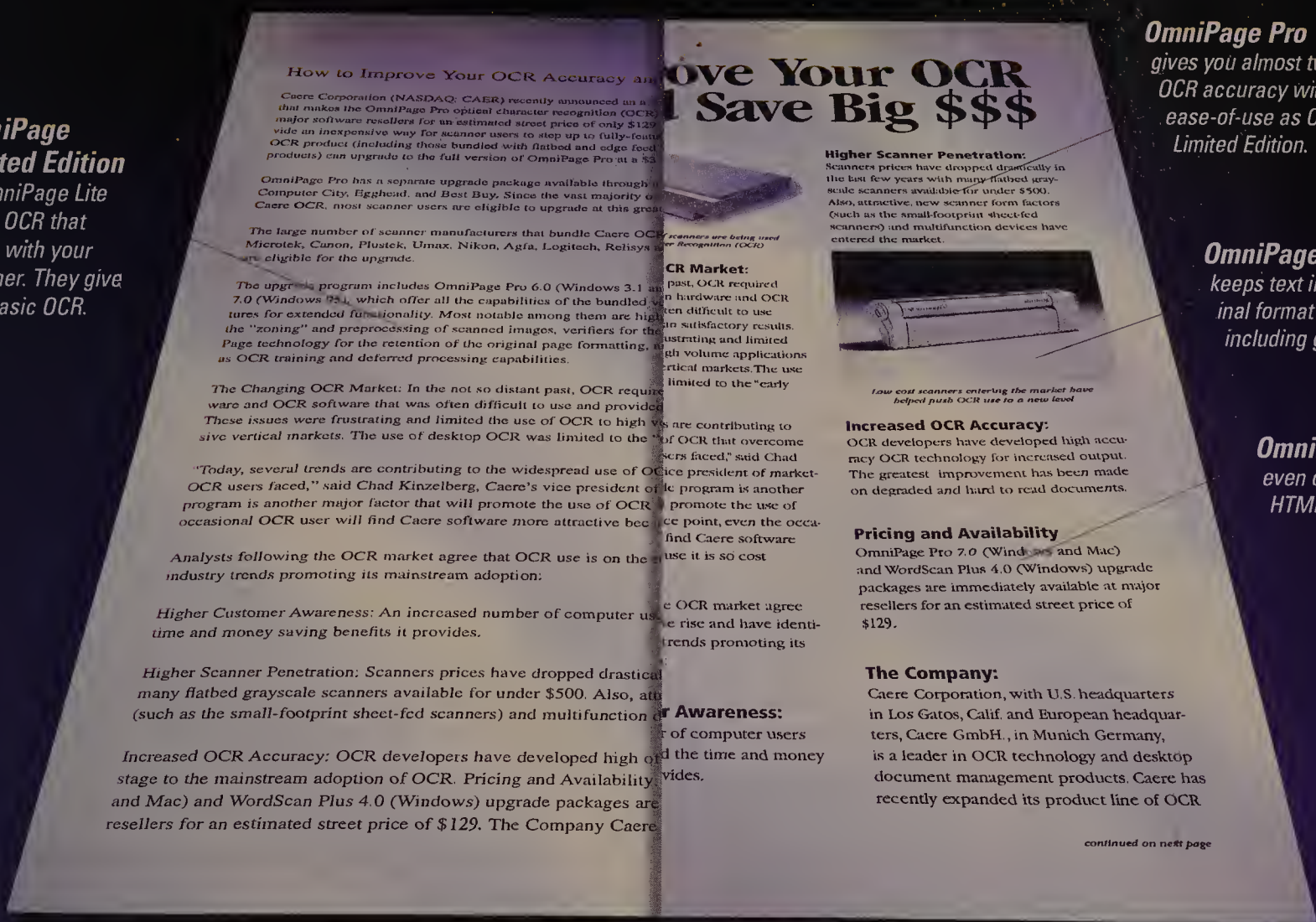
BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD
SUBSCRIPTION DEPARTMENT
PO BOX 51833
BOULDER CO 80323-1833

Upgrade to OmniPage Pro and get the recognition you deserve.

OmniPage Limited Edition *or OmniPage Lite is the OCR that came with your scanner. They give you basic OCR.*



How to Improve Your OCR Accuracy an

Caere Corporation (NASDAQ: CAER) recently announced an a
that makes the OmniPage Pro optical character recognition (OCR)
major software resellers for an estimated street price of only $129
vide an inexpensive way for scanner users to step up to fully-featu
OCR product (including those bundled with flatbed and edge feed
products) can upgrade to the full version of OmniPage Pro at a $3

OmniPage Pro has a separate upgrade package available through
Computer City, Egghead, and Best Buy. Since the vast majority o
Caere OCR, most scanner users are eligible to upgrade at this great

The large number of scanner manufacturers that bundle Caere OCR
Microtek, Canon, Plustek, Umax, Nikon, Agfa, Logitech, Relisys
are eligible for the upgrade.

The upgrade program includes OmniPage Pro 6.0 (Windows 3.1 an
7.0 (Windows 95), which offer all the capabilities of the bundled v
tures for extended functionality. Most notable among them are high
the "zoning" and preprocessing of scanned images, verifiers for the
Page technology for the retention of the original page formatting, a
as OCR training and deferred processing capabilities.

The Changing OCR Market: In the not so distant past, OCR require
ware and OCR software that was often difficult to use and provided
These issues were frustrating and limited the use of OCR to high v
sive vertical markets. The use of desktop OCR was limited to the "

"Today, several trends are contributing to the widespread use of OC
OCR users faced," said Chad Kinzelberg, Caere's vice president of
program is another major factor that will promote the use of OCR
occasional OCR user will find Caere software more attractive bec

Analysts following the OCR market agree that OCR use is on the
industry trends promoting its mainstream adoption:

Higher Customer Awareness: An increased number of computer us
time and money saving benefits it provides.

Higher Scanner Penetration: Scanners prices have dropped drastical
many flatbed grayscale scanners available for under $500. Also, att
(such as the small-footprint sheet-fed scanners) and multifunction d

Increased OCR Accuracy: OCR developers have developed high o
stage to the mainstream adoption of OCR. Pricing and Availability
and Mac) and WordScan Plus 4.0 (Windows) upgrade packages are
resellers for an estimated street price of $129. The Company Caere

ove Your OCR
Save Big $$$

scanners are being used
er Recognition (OCR)

CR Market:
past, OCR required
n hardware and OCR
ten difficult to use
in satisfactory results.
ustrating and limited
gh volume applications
rtical markets. The use
limited to the "early

s are contributing to
of OCR that overcome
sers faced," said Chad
ice president of market-
lc program is another
promote the use of
ce point, even the occa-
find Caere software
use it is so cost

e OCR market agree
e rise and have identi-
trends promoting its

r Awareness:
r of computer users
d the time and money
vides.

Higher Scanner Penetration: Scanners prices have dropped drastically in the last few years with many flatbed gray-scale scanners available for under $500. Also, attractive, new scanner form factors (such as the small-footprint sheet-fed scanners) and multifunction devices have entered the market.

Low cost scanners entering the market have helped push OCR use to a new level

Increased OCR Accuracy: OCR developers have developed high accuracy OCR technology for increased output. The greatest improvement has been made on degraded and hard to read documents.

Pricing and Availability OmniPage Pro 7.0 (Windows and Mac) and WordScan Plus 4.0 (Windows) upgrade packages are immediately available at major resellers for an estimated street price of $129.

The Company: Caere Corporation, with U.S. headquarters in Los Gatos, Calif. and European headquarters, Caere GmbH., in Munich Germany, is a leader in OCR technology and desktop document management products. Caere has recently expanded its product line of OCR

continued on next page

OmniPage Pro *gives you almost twice the OCR accuracy with the same ease-of-use as OmniPage Limited Edition.*

OmniPage Pro *keeps text in its original format and layout, including graphics.*

OmniPage Pro *even outputs to HTML.*

OmniPage Limited Edition

OmniPage Pro

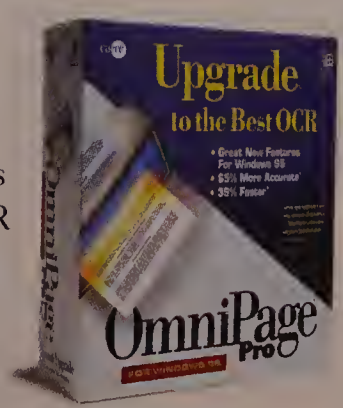
Upgrade now to faster, more accurate OCR.

Sure, the OmniPage Limited Edition OCR that came with your scanner is good. In fact, that's why scanner makers like HP, Microtek and Agfa chose it above all others.

But if you want greater accuracy, full-throttle speed and a ton of new time-saving features, then it's time you moved up to OmniPage Pro®.

OmniPage Pro employs a new, more powerful OCR engine to recognize poor copies and degraded faxes. It integrates seamlessly with your favorite applications like Word, WordPerfect and more. It even guides you through the OCR process using its AutoOCR Toolbar. All with the simple push of a button.

What's more, you get the advantages of the world's most popular OCR software without learning an entirely new program. So make sure you're getting all the OCR power and accuracy you deserve. Visit a local computer retailer today to get your $30 mail-in rebate coupon.



Now Just $99 with mail-in rebate.

caere®

Key Feature Comparison	OmniPage Pro	OmniPage Limited Edition
Caere's fastest and most accurate OCR engine	✓	
AutoOCR Toolbar™ for easy, one-button OCR processing	✓	
OCR Wizard to guide you through the process	✓	
Integrates with most image editors like Photoshop	✓	
OCR from within your favorite applications	✓	✓
Retains original layout	✓	

SPECIAL UPGRADE

FOR MORE INFORMATION OR TO ORDER, VISIT OUR WEB SITE AT

www.caere.com/pcw

FOR FAX BACK SERVICE CALL 408-354-8471

Available for Windows 95, Windows 3.1 and Windows NT.

Microsoft® Windows™ Compatible · Windows 1996 Win 100 · PC World World Class · MVP PCComputing

*Suggested price US $—subject to change. Valid in US & Canada only. Caere, the Caere logo and OmniPage Pro are registered trademarks and AutoOCR Toolbar is a trademark of Caere Corporation. © 1997. All other names are the property of their respective holders.

Circle 91 on reader service card

file processes and the more batch files you run from autoexec.bat, the longer your start-up sequence will be.

DO-IT-YOURSELF ICONS

95 AS LONG AS you're customizing sounds and wallpaper, why not individualize your icons too? If you think the only way to create custom icons is to shell out for a shareware icon painter (or something even more expensive), think again. Brent Vierling of Congerville, Illinois, points out that Windows 95 comes with its own icon-painting program in disguise—Microsoft Paint.

Just follow the steps below, which are illustrated in **STEP BY STEP**.

1. Choose *Start•Programs•Accessories•Paint*. Then use any of the painting tools to create a new masterpiece, or open a bit map (.bmp) file of any dimensions.

If you want to retouch an existing icon, start with a new picture by choosing *File•New*. Choose *Image•Attributes*, select *Pels* for Units, type **32** for both Width and Height, and click *OK*. Then use Explorer or My Computer to locate the icon you want to modify. Make the Explorer window small and choose *View•Large Icons*. Take a picture of the window by pressing **<Print Screen>**. Return to Paint and choose *Edit•Paste*. When prompted by Paint with the option to enlarge the bit map, click *No*. Drag until the icon appears in the frame, then click any tool to complete the paste.

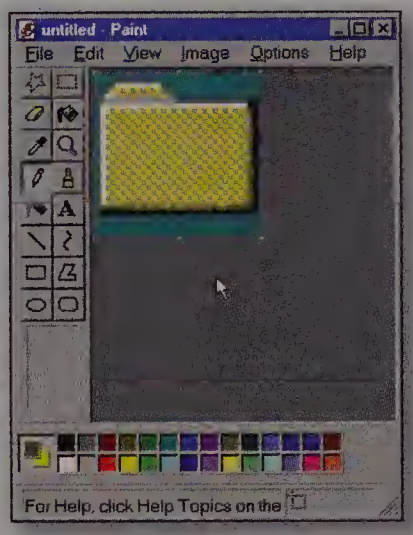
2. Now edit the picture to your heart's content. For an easier view of small pictures, choose *View•Zoom•Custom*, select a magnification level, and click *OK*. If you want to combine another picture with the current one, use the selection tool to mark the area for the new material, then choose *Edit•Paste From*. Locate and select another .bmp file and click *OK*. If the new picture is larger than the existing selection, Paint asks whether to make adjustments to use the whole pasted image. Click *Yes*.

3. Once you have your picture looking the way you want, choose *File•Save as*, and select a location for your new icon file. In the 'File name' box, type a name for your picture in double quotation marks, using the .ico file extension—**"myicon.ico"**, for example. The quotation marks ensure that Paint does not add its default .bmp file extension. Windows sees the .ico extension and automatically creates a 16-color icon from your picture, shrink- ▶

STEP BY STEP

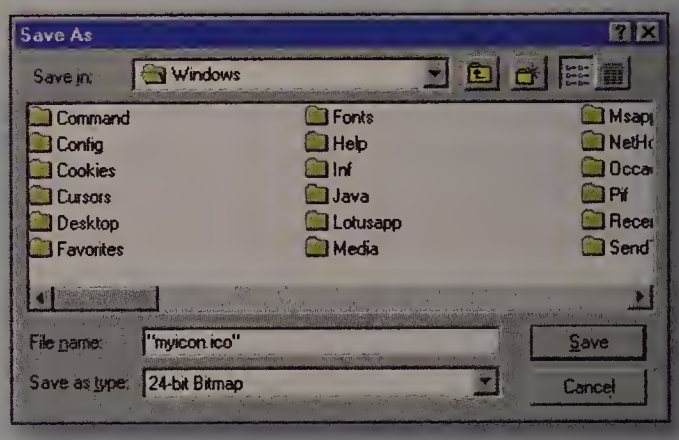
Customize Your Desktop Icons With Windows' Microsoft Paint

❶ In Microsoft Paint, create a new picture, open an existing picture, or paste in a screen shot.

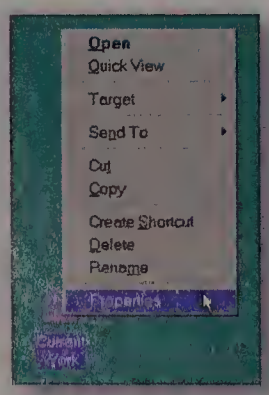


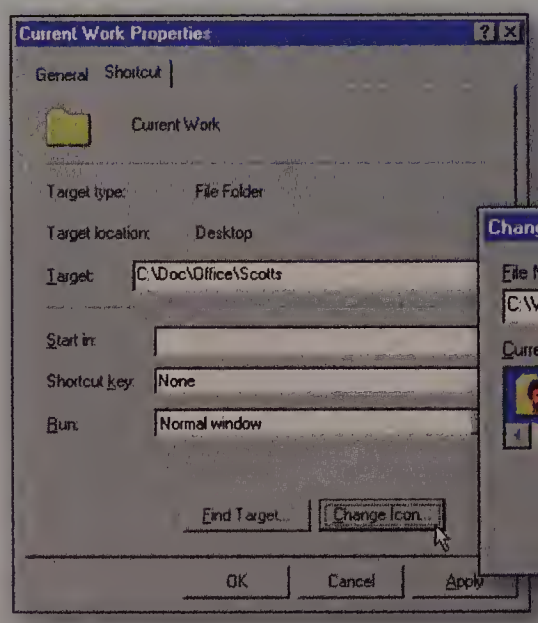
❷ Edit your picture with the paint tools, or paste in other elements. For an easier view of small pictures, choose *View•Zoom•Custom*, select a magnification level, and click *OK*.

❸ Save the file with the .ico extension, using quotation marks so Paint doesn't add its default .bmp extension.

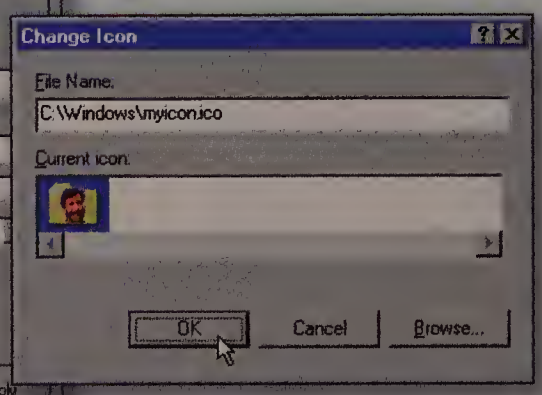


❹ To change a Shortcut's icon, right-click the Shortcut and choose *Properties* from the menu.





◀ ❺ Click the *Shortcut* tab, and click *Change Icon*. In the Change Icon dialog box, type the path and name of your new .ico file. Click *OK* until you've closed all the dialog boxes. ▼



❻ Presto! Your dull, generic Shortcut now has a new, personalized look.

A New Low For High-Resolution Color Scanning!

New Lower Price
$299!
ScanMaker E6 (standard model)
Suggested Street Price.
Was $359

- 30-bit color • Single-Pass
- 600 x 1200 dpi optical resolution
- 9600 dpi enhanced

MICROTEK ScanMaker E6

The 30-bit single-pass Microtek ScanMaker® E6 color flatbed scanner is an incredibly fast scanner that doesn't sacrifice image quality for speed. In fact in a recent test of 17 brand name scanners by PC Magazine (3/4/97), the ScanMaker E6 tied for image quality with two of its more expensive competitors. With the Microtek ScanMaker E6, you'll also get Microtek's easy-to-use, award-winning ScanWizard™ which lets you enhance images even as you scan them! It's the scanning software that PC Magazine called "...arguably the best in the business...."

The ScanMaker E6 Pro model with the full-version of Adobe Photoshop and Xerox TextBridge Pro OCR software (suggested street price $559) is also available. Need more information? Call 1-800-654-4160 or visit our Web site at www.microtekusa.com.

Also from MICROTEK:

Color PAGEWIZ

24-bit color sheetfed scanner. Captures photos or documents in seconds. Quick and easy parallel port connection, small, lightweight, and portable. Includes image editing, OCR and document management software. Only $159 (suggested street price)!

MICROTEK ScanMaker V300

ALL NEW 24-bit color flatbed scanner. Features New FlexScan™ Lid, Zero Reflection Design Technology and Parallel Port connector for quick and easy set up. Includes image editing, OCR and document management software for Windows models. Only $149 (suggested street price)!

MICROTEK ScanMaker E3

1996 EDITORS' CHOICE HOMEPC TOP 100 HARDWARE

HOME PC Editors' Choice!

Quite possibly the best-selling 24-bit color flatbed scanner on the market. Winner of numerous awards and accolades. Features a large scan area, image editing and OCR software, ScanWizard, and Zero Reflection Design Technology. Only $199 (suggested street price!)

INCLUDES: Microtek's award-winning ScanWizard™ scanner controller • Ulead's PhotoImpact SE image editing software (Windows models) • Ulead's ImagePals 2 Go! (for Windows 3.1) • Caere's OmniPage Limited Edition OCR software

OP LIMITED EDITION

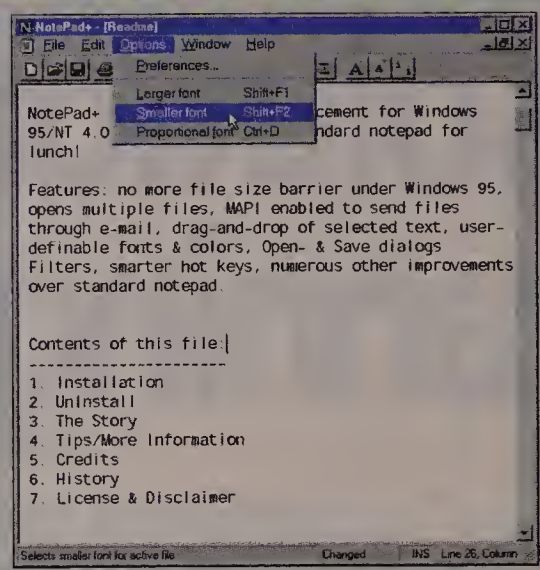
MICROTEK
Better Images Through Innovation.
www.microtekusa.com.

Prices mentioned are United States suggested street prices. Bundled software on CD-ROM / retail packaging depicted is not available with these products. 50-page Automatic Document Feeder and Transparent Media Adapter options available (sold separately). All products mentioned are trademarks or registered trademarks of their respective holders. Caere Corporation (1-800-535-7226). Prices, specifications and software bundles are subject to change without notice. E6FM697

WINDOWS TOOLBOX

At Last, a Great Notepad Replacement

SHAREWARE replacements for the Windows text editor Notepad are a dime a dozen, but most are as clunky as Notepad. Finally, there's NotePad+. It gives us the features we've always wanted—support for larger files, search and replace, customizable fonts and colors, a toolbar, and support for multiple documents, to name a few. What's more, it's free from PC World Online or from the developer's home page at lelystad.flnet.nl/~Omeurs01.



ing the image to fit as needed. (Remember, saving a bit-map file with the .ico extension does not make it a true .ico file that can be edited in an icon editor.)

4. To replace the icon of an existing Shortcut with your custom icon, right-click the Shortcut and choose *Properties*.

5. Click the *Shortcut* tab, then click *Change Icon*. Type the path and name of your icon file, or simply click *Browse* and locate and double-click your icon file. Then click *OK* a few times to close all the dialog boxes.

To change the icon for an entire file type (for example, all text files), open Explorer and choose *View•Options*. Click the *File Types* tab and select the file type from the list. Click *Edit* and then click *Change Icon*. Type in the name of your icon file, or use the *Browse* button to locate and double-click the icon file. Close all dialog boxes.

online *Find files from this article at www.pcworld.com/files and additional tips at www.pcworld.com/hereshow.* Windows Tips *welcomes your questions and tips and pays $50 for published items. Contributing Editor Scott Dunn is a principal author of* The PC Bible, 2nd Edition *(Peachpit Press, 1995, 800/283-9444). See page 14 for contact information.* ■

Five Tips for Getting the Most From Task Manager

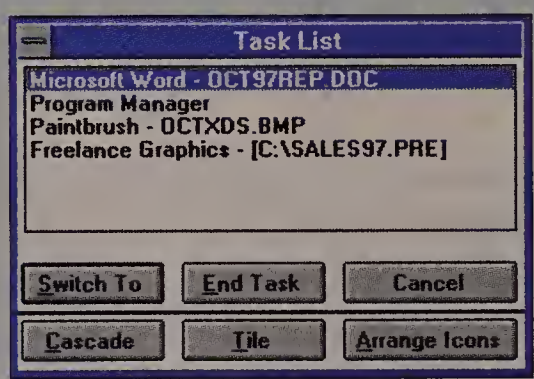
BECAUSE PRESSING **<Alt>-<Tab>** makes it so easy to switch applications, Windows' Task Manager is an overlooked and underused utility. But Task Manager can do more than switch apps. Here are some tips to get the most out of this tool (or dump it altogether):

Three ways to go. You can start Task Manager by clicking the control menu box (the one on the far left of a title bar) of almost any application and choosing *Switch To* from the control menu; by pressing **<Ctrl>-<Esc>**; or by double-clicking a blank area of the desktop.

Pick your tile style. The Task Manager provides a great way to control the open windows on your desktop. To clean up messy minimized icons, align them at the bottom of your screen by clicking the *Arrange Icons* button. To make all open windows overlap slightly, click *Cascade*. To make windows tile side by side, click *Tile*. To make windows tile top to bottom, hold down **<Shift>** as you click *Tile*. Finally, to get the biggest window size to work in while maintaining easy access to minimized icons, minimize all applications but the one you're working in, open Task Manager, and click *Tile*.

Make it stop. Want to close an application without hunting through open windows or minimized icons? Open Task Manager, select the application's name, and click *End Task*.

Tell it where to go. If you don't like where Task Manager appears when you open it by pressing <Ctrl>-<Esc>, you can change its default location. From File Manager or Program Manager, choose *File•Run*, type **system.ini** to open the file in a text editor like Notepad, and look for the line taskman.exe=taskman.exe underneath the [boot] heading but above the next



bracketed heading. (If the line isn't there, add it.) At the end of the line, add a corner coordinate: **1 1** for the upper left corner, **1000 1** for the upper right corner, **1 1000** for the bottom left corner, and **1000 1000** for the bottom right corner. The space before each number is important. For example, to make the Task Manager appear in the bottom left corner, the line should read **taskman.exe=taskman.exe 1 1000**. This trick works only when you open Task Manager by pressing <Ctrl>-<Esc> or by double-clicking the desktop, and it doesn't affect any applications that replace the Task Manager (see next tip). You must restart Windows to see the change.

Get a different task. If you don't use Task Manager but have a favorite app or accessory you want to open on a moment's notice, you can give it Task Manager's place. One way to do this: Edit the same system.ini line described in "Tell it where to go," replacing the term on the right side of the equal sign with the application's name—for example, **taskman.exe=calc.exe.** Next time you press <Ctrl>-<Esc> or double-click the desktop, Calculator will open instead of Task Manager.

Another trick is simply to make a backup copy of taskman.exe (in case you later change your mind), then copy or rename the application's executable file to taskman.exe. At the DOS prompt, for example, you would type **ren taskman.exe taskman.old** and press **<Enter>** to make a backup; and then type **copy calc.exe taskman.exe** and press **<Enter>**.

These two tricks won't work for applications that need to be in a directory other than Windows, of course. And in Windows for Workgroups 3.11, applications that open files (such as Write or Notepad) are less than ideal choices for a Task Manager replacement—every time you try to open them via the Task Manager shortcut, they complain that the coordinates Windows sends the Task Manager are not valid file names. Either live with the error message, or better yet, get a different Task Manager substitute.

What Will Our AlphaScan Displays Do To The Competition?

When it comes to producing the finest displays, nobody outguns SAMPO.

More Reliability - The world's largest computer manufacturers have used SAMPO displays since IBM introduced their first PC in 1982. And most of these displays are still operating. Now that's reliable.

Superior Performance - Our on screen performance is visually outstanding. You'll get vibrant colors and pin-sharp text with every SAMPO display.

Model	CRT/ Viewable	Maximum Resolution	Controls	Dot Pitch
Value Series				
KM-400A	14" / 13.0"	1024 x 768	Analog	.28mm
KM-411	14" / 13.0"	1024 x 768	Digital	.28mm
KM-511L	15" / 14.0"	1024 x 768	Digital	.28mm
KM-711L	17" / 15.8"	1280 x 1024	OSD	.28mm
Performance Series				
KM-520LP	15" / 14.0"	1280 x 1024	OSD	.28mm
KM-750	17" / 15.8"	1600 x 1280	OSD	.25mm
* KM-760B	17" / 16.1"	1600 x 1280	OSD	.25mm
KM-835	20" / 19.0"	1600 x 1280	OSD	.28mm

* Diamondtron Aperture Grill CRT. Diamondtron is a registered trademark of Mitsubishi Electric.

Priced To Sell - The fact that we offer the most aggressively priced displays is the best kept secret in the industry. Feel free to call us, and we'll tell you all about it.

Incomparable Service - We do whatever it takes to earn and keep your business. With SAMPO, you get Technical, Sales, Customer Support, Shipping or Expediting service the way you want it.

Set your sights on SAMPO'S fine line of color displays today. To find out more or for a reseller near you, please call us toll-free at **1-888-321-4100**.

SAMPO
TECHNOLOGY

Corporate Grade Displays. Phone 770 449 6220 fax 770 447 1109

MacUser RATED ★★★★ — AlphaScan 780 Five Stars PC Today, Sep. 1996 — Recommended ResellerNews — PC WORLD TOP 10 MONITORS — Computer ResellerNews TEST CENTER RECOMMENDED — PC Computing ★★★★★ — MAC HOME

All publications mentioned are trademarks of their respective companies.

Circle 197 on reader service card

SPEED FREAKS, POWER YOUR COMPUTER

FEATURING SDRAM MEMORY, AN ULTRA ATA HARD DRIVE AND AGP CAPABILITY.

MONGERS, SHOW-OFFS, IS READY.

NEW DELL DIMENSION XPS D300
300MHz PENTIUM II PROCESSOR
FEATURING MMX TECHNOLOGY

- 64MB SDRAM Memory
- 512KB Integrated L2 Cache
- *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1200HS Monitor (17.9" v.i.s.)
- *NEW* Matrox Millennium II 8MB WRAM Video Card^
- 24X Max.§ Variable CD-ROM
- Creative Labs AWE64 Value Sound Card
- Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer
- 56K Capable** U.S.R. x2 WinModem
- Iomega Zip 100MB Internal Drive
- Microsoft® Office 97 Small Business Edition plus Bookshelf 96
- MS Windows® 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

$3799
Business Lease◊: $134/Mo.
Order Code #500928

NEW DELL DIMENSION XPS D300
300MHz PENTIUM II PROCESSOR
FEATURING MMX TECHNOLOGY

- 64MB SDRAM Memory
- 512KB Integrated L2 Cache
- *NEW* 4.3GB Ultra ATA Hard Drive (9.5ms)
- 1000TX Trinitron® Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- 24X Max.§ Variable CD-ROM
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers
- 56K Capable** U.S.R. x2 WinModem
- Microsoft Office 97 Small Business Edition plus Bookshelf 96
- MS Windows 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

PICTURED SYSTEM

$2999
Business Lease: $108/Mo.
Order Code #500929

NEW DELL DIMENSION XPS D266
266MHz PENTIUM II PROCESSOR
FEATURING MMX TECHNOLOGY

- 32MB SDRAM Memory
- 512KB Integrated L2 Cache
- *NEW* 6.4GB Ultra ATA Hard Drive (9.5ms)
- *NEW* STB Velocity 4MB AGP Video Card*
- 1000TX Trinitron Monitor (15.9" v.i.s.)
- 24X Max.§ Variable CD-ROM
- Creative Labs AWE64 Value Sound Card
- Altec Lansing ACS-290 Speakers with Subwoofer
- 56K Capable** U.S.R. x2 WinModem
- Microsoft Office 97 Small Business Edition plus Encarta 97
- MS Windows 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

$2799
Business Lease: $101/Mo.
Order Code #500927

NEW DELL DIMENSION XPS D233
233MHz PENTIUM II PROCESSOR
FEATURING MMX TECHNOLOGY

- 32MB SDRAM Memory
- 512KB Integrated L2 Cache
- *NEW* 4.3GB Ultra ATA Hard Drive (9.5ms)
- 1000LS Monitor (15.9" v.i.s.)
- *NEW* STB Velocity 4MB AGP Video Card*
- 24X Max.§ Variable CD-ROM
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers
- 56K Capable** U.S.R. x2 WinModem
- Microsoft Office 97 Small Business Edition plus Bookshelf 96
- MS Windows 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

$2399
Business Lease: $87/Mo.
Order Code #500926

Yeah, we're talking to you. The one who likes to be on the edge. Correction. Make that over the edge. Which is exactly where the Dell Dimension XPS D300 is going to take you, screaming at a processor speed of 300MHz. More than just the latest megahertz demon, we've equipped this Intel® Pentium® II processor-based system with some of the industry's fastest features around. Like high-speed SDRAM memory that "bursts" data twice as fast as EDO memory. Perfect for optimizing multimedia applications. And an Ultra ATA hard drive; fast, efficient and up to 8.4GBs big. With two times the data transfer rate of non-Ultra ATA hard drives. And the newest muscle-machine status symbol: Advanced Graphics Port video capability. Faster than the traditional PCI bus, this techno-workhorse boasts accelerated graphic performance for both 2D and 3D applications. So give us a call and we'll build you one of these monsters today. Then strap yourself in for a real power trip.

TO ORDER TOLL-FREE
800-545-3608
TO ORDER ONLINE
www.dell.com/buydell
Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03300

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

†For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., Attn: Warranty, One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ^4MB Baseboard with a 4MB Upgrade Module. §24X Max./12X Min. **x2 products are capable of 56Kbps. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6Kbps. Actual speeds may vary depending on line conditions. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. ©1997 Dell Computer Corporation. All rights reserved.

Delete All Empty Rows in a Flash

I IMPORT LOTS of text files into Excel. These files often contain many blank rows, which I end up having to delete one by one. Is there a more efficient way to get rid of them?

Gabriel Schervish
Belmont, Massachusetts

IF THE ORDER of the rows doesn't matter, the easiest approach is to highlight all the data and then sort by one of the columns. The empty rows will end up at the bottom of the worksheet, and your problem is solved.

If you can't change the order of the rows, you need to create a macro that loops through the rows and deletes the empty ones. This process is tricky, because while the macro is zapping the rows, the numbers of the remaining rows keep changing. The solution is to loop through the rows *backwards*, so that deleting a row doesn't affect the numbers of the other rows.

```
Sub DeleteEmptyRows()
  LastRow = ActiveSheet.UsedRange.Rows.Count
  Application.ScreenUpdating = False
  For r = LastRow To 1 Step -1
    If Application.CountA(Rows(r)) = 0 Then Rows(r).Delete
  Next r
End Sub
```

FIGURE 1: DELETE ALL EMPTY ROWS in an Excel worksheet in one quick step with this simple macro.

The macro in **FIGURE 1** does just that. If you're using Excel 5 or Excel 95, select *Insert•Macro•Module* to insert a new Visual Basic module into your workbook, and enter the code shown in Figure 1. In Excel 97, select *Tools•Macro•Visual Basic Editor* (or press **<Alt>-<F11>**), then select *Insert•Module* and enter the macro.

To run the macro, first activate the worksheet that you want to clean up. Then choose *Tools•Macro* (in Excel 97 the command is *Tools•Macro•Macros*), and select *DeleteEmptyRows* from the Macro dialog box. The empty rows will vanish before your eyes. You'll want to save your workbook before executing the macro, because the operation cannot be undone. I included a command that turns off screen updating for faster performance.

FIX MESSED-UP MENUS IN EXCEL 97

I RECENTLY UPGRADED to Excel 97. I customized a few of the toolbars, and my Data menu disappeared. Restarting Excel doesn't fix it. Help!

Marisa VanWinkle, San Diego

DON'T FRET. Select *View•Toolbars•Customize*, and then click the *Toolbars* tab in the Customize dialog box. Select *Worksheet Menu Bar* and click the *Reset* button (see **FIGURE 2**). The menu bar will be restored to its original state. Excel 97's menu bar is actually a toolbar in disguise, and it's easy to delete a menu accidentally while you're customizing other toolbars. So be careful out there.

SUPPRESSING 1-2-3'S SPLASH SCREEN

MOST WINDOWS programs display a graphics logo or splash screen at start-up. If you're a 1-2-3 user, you can bypass Lotus's splash screen by adding a switch to the command line used to start 1-2-3. These switches (shown below) differ for each version of the spreadsheet program.

The procedure for modifying the command line varies with the version of Windows you have. If you use Win 95, find the Shortcut that loads 1-2-3. This may be a desktop icon or an entry in your Windows\Start Menu\Programs\Lotus SmartSuite folder. Right-click the Shortcut and select *Properties*. In the Properties dialog box, click the *Shortcut* tab, and modify the Target field by adding the correct switch.

If you're using Windows 3.*x*, select the 1-2-3 icon in Program Manager and press **<Alt>-<Enter>** to display the Program Item Properties dialog box. Then modify the Command Line field by appending the appropriate switch.

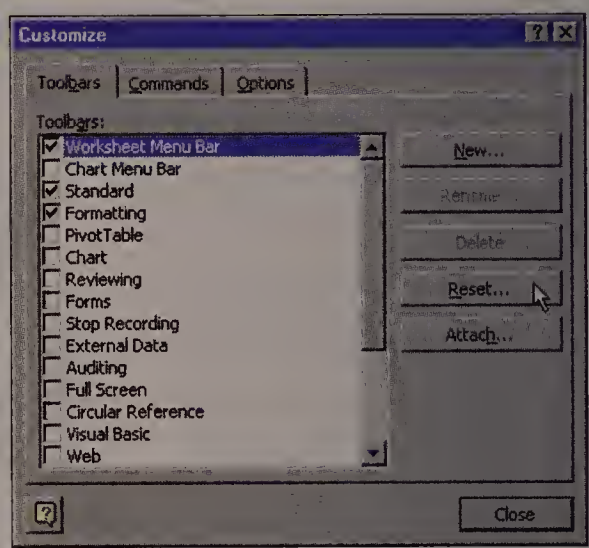


FIGURE 2: RESET EXCEL 97 menus and toolbars in the Customize dialog box.

VERSION	SWITCH	EXAMPLE COMMAND LINE
1-2-3 97	/len /s	c:\lotus97\123\123w.exe /len /s
1-2-3 release 5.0	l	c:\lotsuite\123r5w\programs\123w.exe l

IT'S A NEW SPREADSHEET GUY!

WELCOME TO MY first Spreadsheets column for *PC World*. Former columnist Richard Scoville has moved on, and I'm delighted to take over his duties. I've been involved with spreadsheets since VisiCalc and spend most of my time either developing spreadsheets or writing about them. In future months, I'll share my tips and techniques and answer as many of your questions as I can. The next time you're on the Web, check out my site, The Spreadsheet Page, at www.j-walk.com/ss/.

Spreadsheets *welcomes your questions and tips and pays $50 for published items. Contributing Editor John Walkenbach has written nearly two dozen spreadsheet books.* *See page 14 for contact information.* ■

Get it your way. RIGHT AWAY.

QUIN-55 (Pentium® processor & Pentium® processor with MMX™ technology based PCs)

APRI-31/32 (Single/Dual Pentium® Pro processor based PCs)

APRI-74 (Pentium® II processor based workstations/servers)

DTN-5M (Pentium® processor with MMX™ technology based notebooks)

You're savvy about PC systems. You know what you need and what you want. And our line of award winning QUIN-55 PCs offers you a world of networking choices. Our economical NetPC desktop system can help reduce your total cost of ownership as well as the complexity of managing your PC environment. It includes a 133MHz Pentium® processor and runs Microsoft® Windows® operating systems. Need more power? Our cost efficient workstations/servers are available with a 200MHz Pentium® processor, 200MHz single or dual Pentium® Pro processor, or a 266MHz Pentium® II processor to run Windows NT™. Client presentations? Consider our budget-friendly line of DTN-5M notebooks that feature a 150MHz or 166MHz Pentium® processor with MMX™ technology.

Best of all. These systems can be custom configured to the way you work. From components to peripherals, you name it, we'll do it. Your way. To discover the DTK price/performance difference, contact your reseller. Or call 1-800-BUY-A-DTK (1-800-289-2385).

dtk®

DTK Computer

www.dtkcomputer.com

intel inside pentium® PROCESSOR

MMX™ intel inside pentium® II PROCESSOR

The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corp. Windows is a registered trademark of Microsoft Corp. © 1997 DTK Computer Inc. All rights reserved.

Boston 617/932-3800	New York 908/562-8800	Washington, D.C. 703/222-9194	Atlanta 770/279-1385	Tampa 813/885-2668	Miami 305/597-8888	Pittsburgh 412/373-6750	Cleveland 216/349-1995	Chicago 847/593-3080
Indianapolis 317/872-8850	Milwaukee 414/679-7870	Minneapolis 612/557-1973	Kansas City 913/492-3800	Dallas 972/484-8535	Houston 281/568-6688	Scottsdale 602/451-6774	Los Angeles 818/810-0098	

Circle 84 on reader service card

Reorder numbered paragraphs ◆ Change default bullets ◆ Create an index

Make Word 97 Easier on Your Eyes

DOES WORD'S WHITE background hurt your eyes? A new feature in Word 97 lets you change the background color of your editing screen to any shade under the sun. It's simple to do but not obvious to most users. Here's how to use this feature:

1. Select *File•Open*, then load **normal.dot** as you would any document. It's usually in the MSOffice/Templates directory.
2. Select *Format•Background* and select the color of your choice (see **FIGURE 1**).
3. Select *File•Save*, then *File•Close*.

All new documents you create in Word will appear with the background color you selected. These background colors appear only on screen; they do not print.

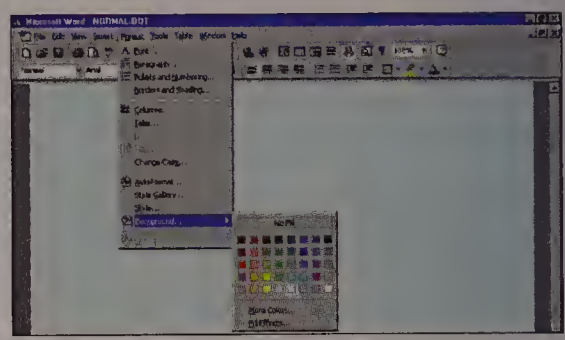


FIGURE 1: CHANGE WORD 97'S BACKGROUND color by modifying the normal.dot template.

CLEAN UP E-MAIL TEXT IN WORD

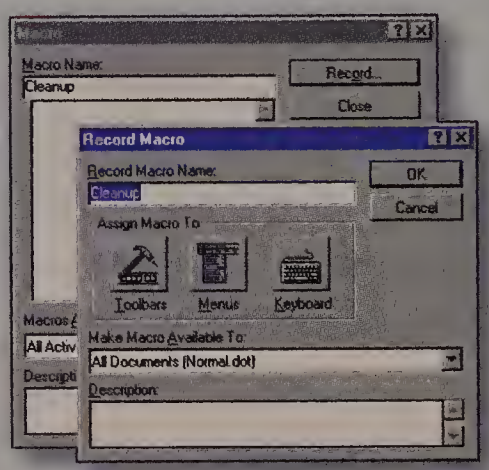
E-MAIL MESSAGES and other ASCII files often include hard returns at the end of each line. When you open such text documents in Word, or cut and paste from your e-mail program, the text has strange line breaks and odd paragraph formatting. While Word has no built-in tool to fix these awkward documents, there is an easy solution that works in all versions of Word. If you handle many such documents, you'll want to record the steps as a macro so you won't have to repeat them (see also **STEP BY STEP**).

1. Open the document you want to reformat, then start recording your macro: Select *Tools•Macro*, type a name for your macro, such as **Cleanup**, click *Record*, and in the Record Macro dialog box, click *OK*.
2. Select *Edit•Replace*, type **^p** (a caret and a *p*) in the Find What box, and type ~ (a tilde) in the Replace With box. Click *Replace All* to replace all hard returns with tildes. Click *OK* at the prompt. The document will look strange, but don't worry about it.
3. While the Replace dialog box is still on screen, type **~~** in the Find What box, and type **^p** in the Replace With box. Click *Replace All* to replace all double hard returns (the normal break between paragraphs in text files) with a single hard return. Click *OK* at the prompt.
4. Type ~ in the Find What box, and type a single space in the Replace With box. Click *Replace All* to replace what was the single hard return at the end of a line with a space character to separate words. Click *OK* at the prompt, then click *Close*.
5. Click the *Macro Stop* button to turn off macro recording. You may still have to do some minor editing ▶

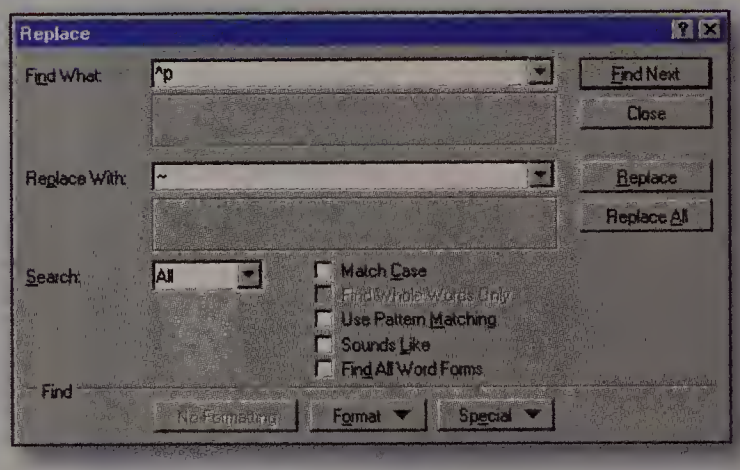
STEP BY STEP

Reformat Imported E-Mail and ASCII Text With a Simple Word Macro

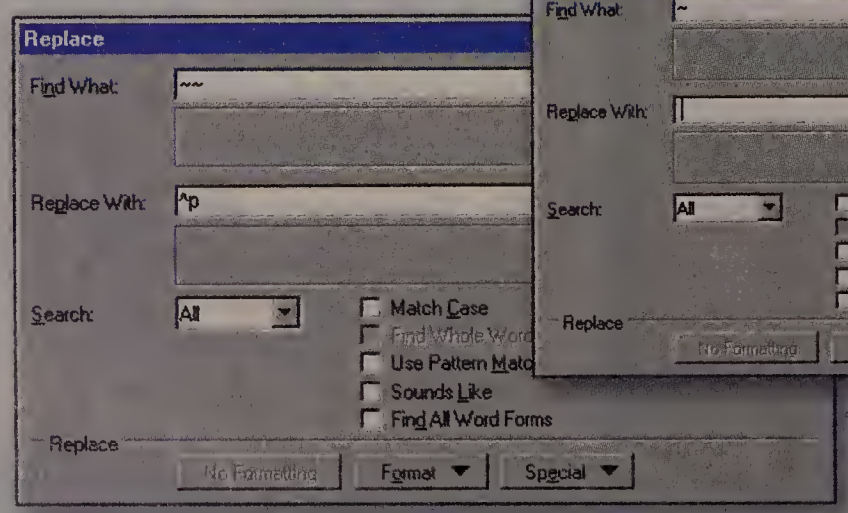
❶ Start recording the Cleanup macro.



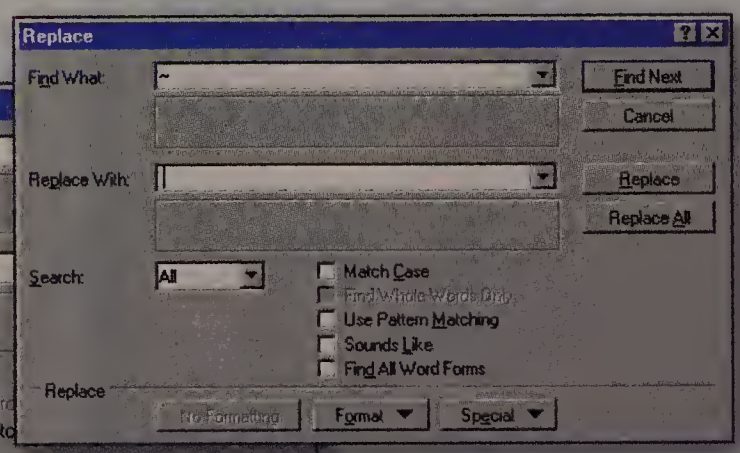
❷ Replace all end-of-line hard returns with tildes.



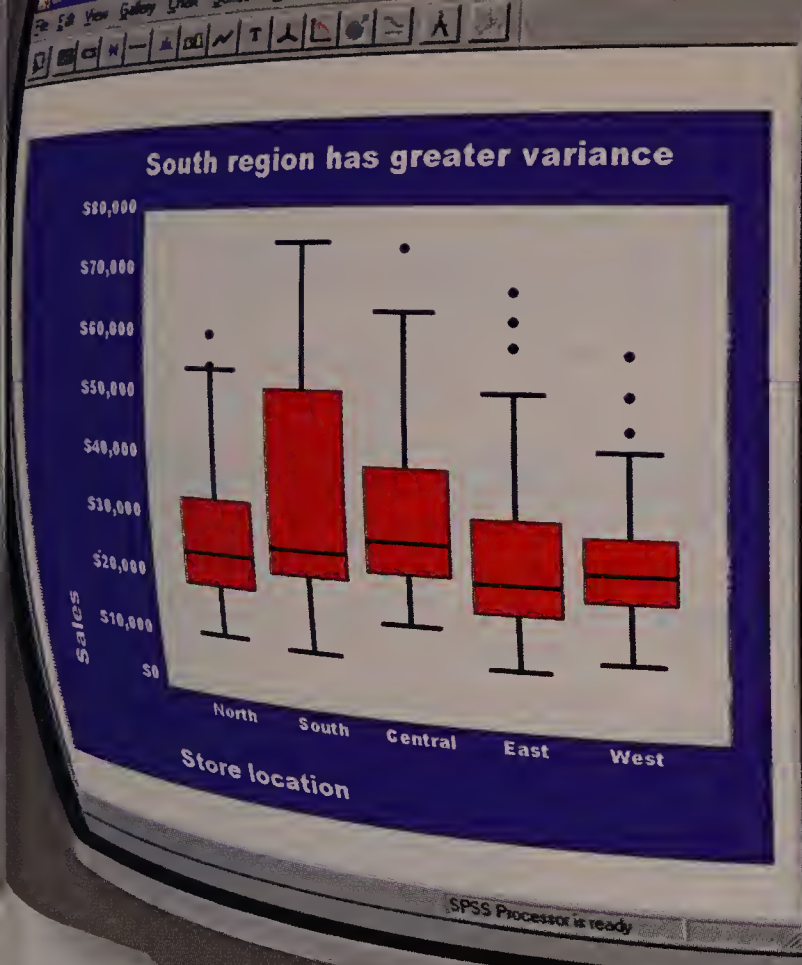
❸ Replace all double hard returns (the normal break between paragraphs in text files) with a single hard return.

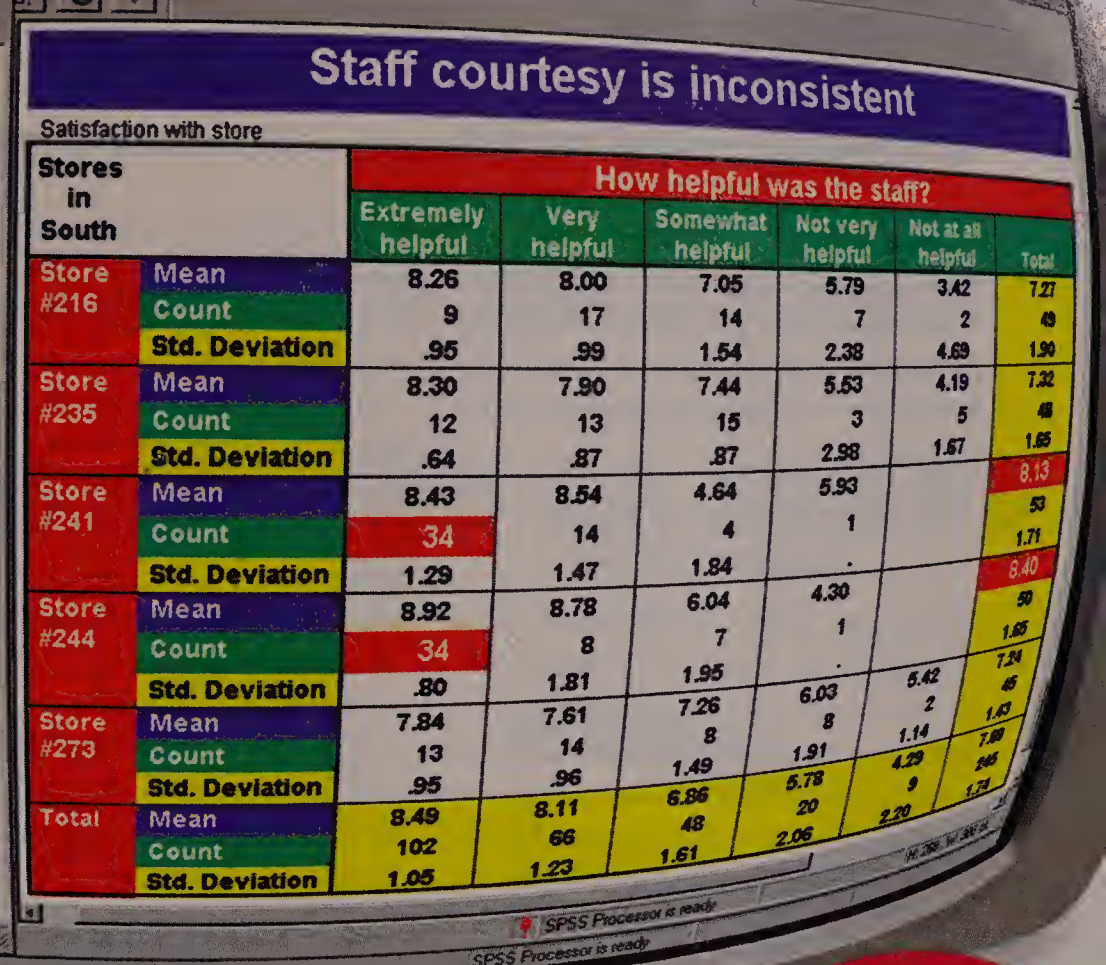


❹ Replace the tildes from step 2 with spaces.



◀ ❺ Turn macro recording off.





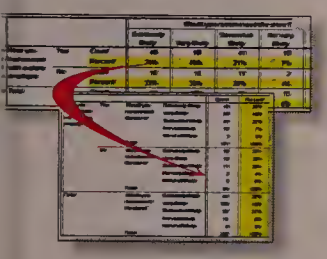
Stores in South		How helpful was the staff? Extremely helpful	Very helpful	Somewhat helpful	Not very helpful	Not at all helpful	Total
Store #216	Mean	8.26	8.00	7.05	5.79	3.42	7.27
	Count	9	17	14	7	2	49
	Std. Deviation	.95	.99	1.54	2.38	4.69	1.90
Store #235	Mean	8.30	7.90	7.44	5.53	4.19	7.32
	Count	12	13	15	3	5	48
	Std. Deviation	.64	.87	.87	2.98	1.67	1.65
Store #241	Mean	8.43	8.54	4.64	5.93		8.13
	Count	34	14	4	1		53
	Std. Deviation	1.29	1.47	1.84	.		1.71
Store #244	Mean	8.92	8.78	6.04	4.30		8.40
	Count	34	8	7	1		50
	Std. Deviation	.80	1.81	1.95	.		1.65
Store #273	Mean	7.84	7.61	7.26	6.03	5.42	7.24
	Count	13	14	8	8	2	45
	Std. Deviation	.95	.96	1.49	1.91	1.14	1.43
Total	Mean	8.49	8.11	6.86	5.78	4.29	7.69
	Count	102	66	48	20	9	245
	Std. Deviation	1.05	1.23	1.61	2.06	2.20	1.73

New! Version 7.5 for Windows® 95 and NT™

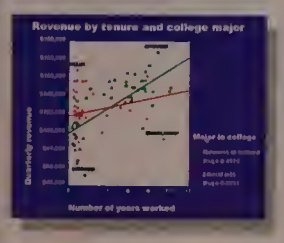
Unleash the power in your data

SPSS mines your data in ways no spreadsheet or reporting tool can

Go beyond spreadsheets with analytical techniques such as crosstabs, regression, factor and over 100 others.



Use SPSS' multidimensional pivot tables to discover critical information that might be buried in traditional reports.



Get the best picture of your data with over 60 high-resolution business, professional and quality charts.

The critical information you need, like the variance and distribution of your data, isn't in simple summary reports. To compete and win, you need to take the next step – advanced analysis that leads to better decisions. Use powerful statistical methods and revealing charts to spot patterns and trends. Discover what's significant. Make better forecasts. You don't have to be a statistician to use SPSS. SPSS assists you with a tutorial, step-by-step instructions and "What's this?" help. We help you find a solution with a range of training and analytical consulting services. See our Web site for a white paper on how statistics help you achieve a competitive advantage.

SPSS is used today to:

- Analyze your database
- Accurately forecast sales
- Increase customer satisfaction
- Find the most profitable segments
- Improve mailing responses

"Users will want this program for when their spreadsheets run out of steam." – PC Magazine

"...fast, powerful, robust, and a joy to use." – Windows Sources

"...easy enough for statistics newcomers, but includes features that power users require." – PC World

"...an essential tool" – PC Week

SPSS
Real Stats. Real Easy.℠

For more information

Call 1 (800) 543-5837 A5837

or fax 1 (800) 841-0064
Visit our site on the World Wide Web: http://www.spss.com
or e-mail: sales@spss.com

We speak your language with 26 offices and 60 distributors worldwide.

Circle 253 on reader service card

manually to finish cleaning up the document, but most of your work will be done.

The next time you need to clean up e-mail or ASCII text in Word, select *Tools•Macro•Macros*, select the *Cleanup* macro, and click *Run*.

REORDER MANUALLY NUMBERED ITEMS

WHEN YOU INSERT or delete an item in a numbered list, Word automatically puts the list in the correct order and renumbers the remaining items—that is, if you created the list using the Numbering icon or while the Automatic Numbered Lists feature was turned on. If you typed the numbers in manually, or if you open a document created with another program, it can be a real chore to edit the numbers when you move or delete paragraphs or insert new ones.

But as long as each numbered item is a single paragraph, there's an easy two-step way to accomplish this seemingly tough job. This technique won't renumber the paragraphs, but it will reorganize them in the correct order based on the numbers that are there.

1. Highlight the entire list.
2. Select *Table•Sort Text* (select *Table•Sort* in Word 97), then click *OK* in the Sort Text dialog box without altering any of the settings in the dialog box.

SPLIT THE SCREEN TO WORK ON TWO PARTS OF A DOCUMENT

THERE ARE TIMES when it's useful to see two parts of the same document simultaneously—when you're working on the introduction and the conclusion, for example. The split screen feature in both Word and Word Pro allows you to do just that. (Current versions of WordPerfect don't include this feature.) With a split screen, cutting text from page 1 and pasting it to page 10, for example, is easy when both pages appear on screen at the same time. Here's how to split up your work in Word and Word Pro:

Word 6.0, 7.0, and 97: Open the document and select *Window•Split*. Drag the gray dividing line to the point on the editing window where you want the screen divided, then click to split the screen. You can scroll through the document in either of the new windows, and drag selected text or other objects between the windows. To remove the split screen, select *Window•Remove Split*.

Word Pro 96 and 97: Open the document and select *View•Split Top-Bottom*. Word Pro will divide the screen into equal-size windows. You can scroll through either editing window independently, and drag text or other objects between the windows. When you're finished working in this mode, select *View•Clear All Splits* to restore the single window.

MARKING WORD PRO INDEX ENTRIES

IF YOU'RE WORKING on a long document that will eventually have an index, it makes sense to mark text for top-level index entries as you go, rather than wait until after the entire document has been written. Fortunately, that's easy to do in Word Pro 96 and 97.

When you start working on the document, select *Text•Mark Text as•Index Entry* before beginning to type or when you type the first item to be indexed. This displays the Mark Text toolbar shown in **FIGURE 3**.

FIGURE 3: TO CREATE AN INDEX in Word Pro, type the word you want as an entry.

Each time you type a word or phrase you want to have in the index, or after typing a paragraph or two, highlight the desired text. It will appear automatically in the Primary field of the toolbar. Just click *Mark* on the toolbar to make the text a top-level index entry. Click back in the document to continue writing or editing.

You can use the Mark Text toolbar for secondary index entries as well, but it's usually best to create all your top-level entries first, since Word Pro keeps a list of them in the toolbar.

Find additional tips at www.pcworld.com/hereshow. Word Processing welcomes your questions and tips and pays $50 for published items. Contributing Editor George Campbell is a contributor to The PC Bible *(Peachpit Press, 1995, 800/283-9444). See page 14 for contact information.* ■

Replace Standard Bullets With Symbols in WordPerfect

THERE ARE MANY interesting characters I'd like to use in bulleted lists instead of the default bullets that WordPerfect offers. Is there any way to replace these default characters?

Steve Colburn, Largo, Florida

IT'S EASY TO replace the default bullet characters in WordPerfect 6 and 7. Here's how:

1. In a blank document, select *Insert•Bullets & Numbers*. In the Bullets & Numbers dialog box, select the entry you want to change in the Styles list, and click *Edit* (see **FIGURE 2**).
2. In the Styles Editor dialog box, press **<Delete>** to remove the current character code.
3. Press **<Ctrl>-w** to open the WordPerfect Characters dialog box, select the character that you want to use as a bullet, and then click the *Insert and Close* button.
4. Back in the Styles Editor dialog box, click on the new character in the Contents box, to the left of the blinking red rectangle, to convert the character to a WordPerfect character code and reposition it.
5. Click *OK* twice to finish the job. Your new character becomes the new WordPerfect default for that bullet type.

You'll have to remember which characters correspond to the standard bullet entries, since you can't rename the entries in the dialog box.

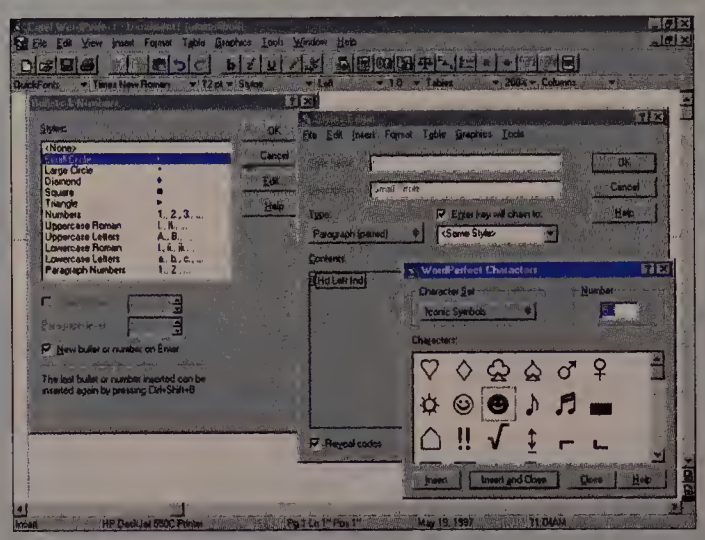
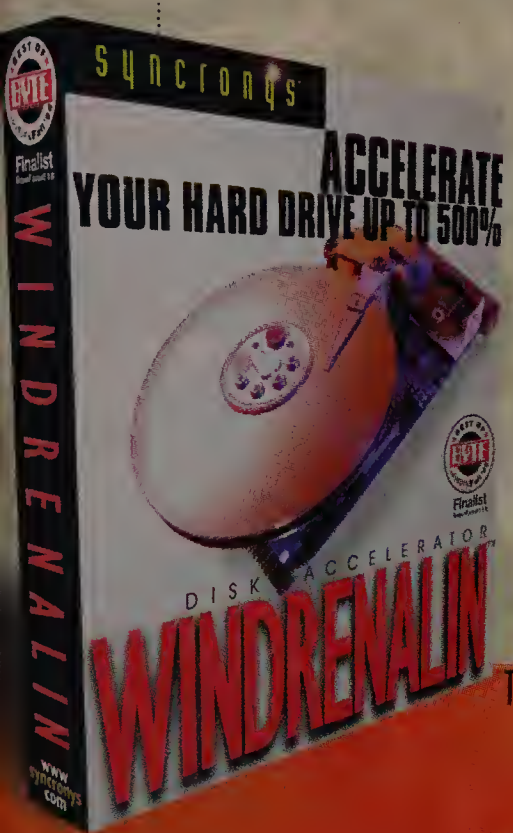


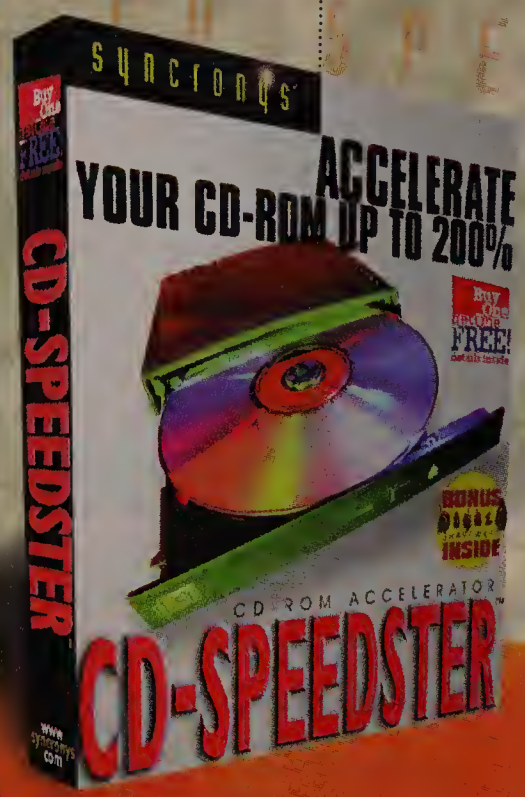
FIGURE 2: BULLETS DON'T HAVE TO BE BORING. Change WordPerfect's default bullets to hearts or smiley faces.

UP TO 500% FASTER HD SPEED

AND UP TO 200% FASTER CD SPEED

We asked PCTest and NSTL to check it out. Here's what they had to say...





TRUE SPEED

THE RESULTS

Good Launch times? PCTest concluded:

"Overall improvements range from 33% to 184% ... With the multi-tasking running, an overall improvement of 450% to 3,600% was experienced."†

NSTL reported:

"Windrenalin showed a marked improvement in application launch times. The improvement is dramatic when running four file comparisons in the background."††

*Multiple searches on Compton's Interactive Encyclopedia™ installed in minimum mode conducted under Windows 95 on a Pentium 133 with 16MB RAM, 8X CD player and 100MB CD-ROM cache. Actual results may vary based upon individual systems and applications.

† PCTest–Windrenalin HD Acceleration Final Report, 1/31/97, pg. 2 (General Conclusions and Observations). Actual results may vary based on your system, applications and nature of multi-tasking.

†† NSTL Final Windrenalin HD Report [illegible], pg. 3. NSTL makes no recommendation or endorsement of any product. Actual results may vary based on your system, applications and nature of multi-tasking.

NSTL TESTED

CERTIFIED PCTest CORPORATION COMPATIBILITY TESTED

THE RESULTS

PCTest found multiple searches in Compton's Interactive Encyclopedia are up to 56% faster on an 8X CD-ROM player. And the competition gets left behind, too. CD-Speedster outperformed both SpeedyROM™ and d-Time95™.*

That's how to make your CD searches sizzle and smooth video and sound on slower CD players.

And it comes with the hot Diablo™ shareware game.

We're faster

syncronys softcorp™

and others agree.

www.syncronys.com

997 Syncronys Softcorp. All rights reserved. drenalin software is under license from Acceleration tware International Corporation and is covered by Patent No 5584007. Syncronys, the Syncronys , CD-Speedster, and Windrenalin are trademarks of cronys Softcorp. Diablo is a trademark of Davidson ssociates, Inc. All other trademarks are the proper- f their respective holders.

Circle 232 on reader service card

Monitor your Internet connection ◆ Don't accept cookies from strangers

A Survival Guide for Microsoft E-Mail Packages

MICROSOFT HAS BEEN churning out e-mail programs as prolifically as Stephen King turns out horror stories—and some users have found them just as scary. There's Exchange, Outlook 97, Outlook Express, Internet Mail and News, and a new Outlook Web Access. Because each bears the magic Microsoft logo, users eagerly buy or download them, certain they're getting something good—and sometimes they are. But one morning they wake up and realize they have four Microsoft e-mail programs on their system—and are using Eudora Light instead.

Here's a guide to the Microsoft e-mail programs, when to use them, when to nuke them, and what to do if they act up.

HOW TO TELL THEM APART

Exchange. This is the "universal in-box" that comes with Windows 95; it's also known as Windows Messaging. To find it, click the *Inbox* icon. Exchange is a rudimentary e-mail program whose sole advantage over other Microsoft e-mail programs is that you can rig it to download messages from a variety of sources, including CompuServe, Microsoft Network, and your Internet service provider. You can also use it to send faxes—a procedure not for the timid. But Exchange is clunky. If you have only one online service or ISP, you're better off using that service's software or an e-mail program such as Eudora Light. Microsoft is dropping Exchange; the default e-mail package in Windows 98 will be Outlook Express.

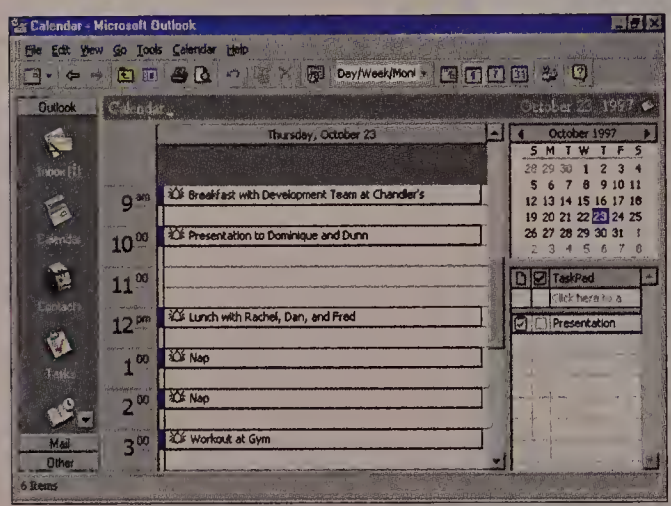


FIGURE 1: OUTLOOK 97 combines e-mail with a PIM, but it has problems with stability and compatibility.

Outlook 97. Microsoft's most powerful e-mail client integrates e-mail with personal information management and groupware features (see **FIGURE 1**). It offers calendars, journals, and schedules; a battalion of contact management tools; and the ability to create personal folders and subfolders galore. If your office runs Exchange Server (Microsoft's proprietary messaging platform), employees can use Outlook 97 to share contacts and calendars. You can automate e-mail retrieval, tag messages with notes about follow-up action, and drag and drop Microsoft Office files into e-mail messages.

But the original shipping version of Outlook 97 was famously buggy, particularly with Internet mail servers—it was designed primarily for Exchange Server. As this goes to press, Outlook 97 continues to suffer from problems such as e-mail messages getting stuck in the Outbox, program and system crashes, and other glitches. It has also had difficulties supporting multiple POP3 accounts. Microsoft has posted patches on its Web site (www.microsoft.com/kb/articles/q166/0/22.html) and in August was planning to release an upgraded Outlook 8.02 that would solve all of these problems, as part of Microsoft Office 97 Service Release 1.

If you love Outlook's other features and are willing to spend a few hours troubleshooting (see "Where to Get Help," next column), then by all means continue to use this program. Otherwise, try simpler and more robust e-mail products such as Pegasus (www.pegasus.usa.com) or Eudora (www.eudora.com).

Outlook Express. This e-mail program will be built into Internet Explorer 4.0 and Windows 98. Outlook Express is the successor to Internet Mail and News, which is found in earlier versions of Microsoft's Internet Explorer. Outlook Express (see **FIGURE 2**) supports HTML-formatted mail and offers a few nifty features such as the ability to integrate e-mail with Usenet news and the ability to search big Internet "white pages." It can filter e-mail (useful for automatically deleting spam), and gather messages from multiple ISPs.

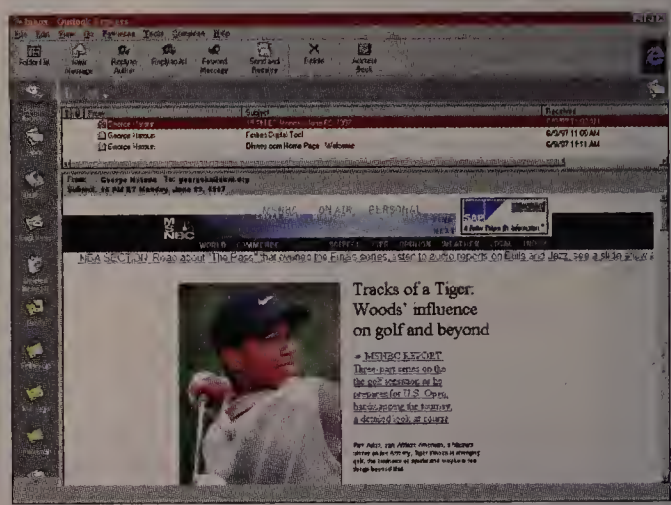


FIGURE 2: OUTLOOK EXPRESS is a free Internet e-mail client that will look much like Outlook 97.

But the early beta versions of Outlook Express were clumsy to use and full of bugs; for example, they disabled the Mail button in Internet Explorer. Microsoft says it will fix the bugs and offer a revamped user interface, much closer to that of Outlook 97, by the time the package formally debuts along with Internet Explorer 4.0. If the program works for you, great. But before you settle on it you may want to test-drive Eudora Light or Pegasus—I find them both friendlier.

Outlook Web Access. This is a new Web browser e-mail client, but it works only with Microsoft's Exchange Server.

WHERE TO GET HELP

YOU'LL FIND A variety of helpful troubleshooting tutorials on Microsoft's Web site (www.microsoft.com). Click *Search* ▶

EARTHLINK NETWORK® MEMBER BENEFIT # 17

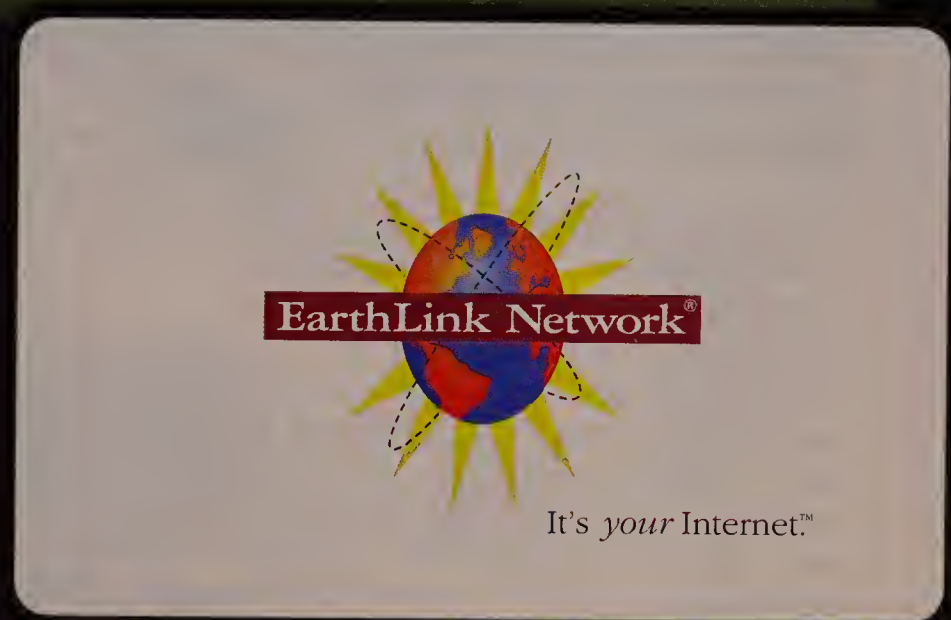
Free Internet Access

FOR EVERY NEW MEMBER YOU REFER*,
YOU WILL GET A MONTH OF FREE INTERNET ACCESS.
IT'S THAT SIMPLE.

No catch, no strings - the program is open to all EarthLink members.

Every month, we give thousands of our members free access. In fact, some of our members refer so many people, they never have to pay for their Internet access.

Our free access program is just one of many benefits EarthLink members enjoy. If you're not getting free Internet access from your current provider, give us a call.

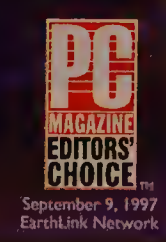


- EMAIL
- UNLIMITED INTERNET ACCESS
- FREE 24-HOUR HELP LINE℠
- PERSONAL START PAGE
- 33Kbps/56Kbps
- NATIONAL ISDN
- FREE 2MB WEB SITE
- OVER 810 LOCAL DIALUP #'S
- NEWSLETTER
- INTERNATIONAL ROAMIING
- NEWSGROUPS
- FREE INTERNET USER GUIDE
- COMPLETE SOFTWARE FOR WINDOWS OR MAC
- CHOICE OF BROWSER
- 800# ACCESS OPTION

1-800-815-1932, ext. 104

*For details on EarthLink Network's Referral Program check out http://www.earthlink.net/company/free_access.html

© 1997 EarthLink Network, Inc. Trademarks are the property of their respective owners. All rights reserved.



Circle 85 on reader service card

Troubleshooting Microsoft Mail

Problem: Your program can't find the out-box or the in-box.

Solution: All four Microsoft e-mail programs store your messages in a Personal Folder (in .pst files) and your addresses in a Personal Address Book (in a .pab file). Depending on how and when you installed your first e-mail client, these files can end up in different places; you may need to tell any e-mail programs you install later where to find them.

Problem: Your e-mail messages are getting stuck in Outlook 97's Outbox.

Solution: This problem can be caused by a damaged Personal Folder (.pst) file. Run an Inbox Repair Tool to fix it.

Problem: Outlook doesn't start.

Solution: The Personal Folder file or the mapi32.dll and msvcrt40.dll files may have been damaged. These files are sometimes overwritten when other Windows applications are installed (CorelDraw 7 is one program that does this). To get everything working again, you'll have to reinstate the e-mail program's version of these files.

and type in the name of the e-mail program you're using.

The first step in fixing Outlook 97's problems is to install the Internet Mail Enhancement Patch; for details see www.microsoft.com/outlook/documents/imep.htm. Technical support newsgroups for Outlook 97 can be found on the Web at www.microsoft.com/Support/Products/Office/Outlook/.

Sue Mosher's Slipstick Systems Outlook Page (www.slipstick.com/exchange/outlook.htm) is the premier source of Outlook 97 advice. It offers directions on how to import the contents of mailboxes and address books from non-Microsoft e-mail programs and export Outlook 97 contents to other programs. Mosher's page also provides recommendations on mail add-ons.

TRACK YOUR INTERNET CONNECTION'S VITAL SIGNS

IF YOU SUSPECT your Internet connections aren't what they should be, download VitalSigns' Net.Medic (www.vitalsigns.com). This shareware monitors your modem speed, your connection throughput, and your ISP's efficiency, and it keeps you abreast of traffic conditions on the Web (see **FIGURE 3**). Net.Medic also alerts you when your browser is hogging memory, and it creates efficiency reports on your ISP that tell you how good your connections are and how many errors occur. Registration is $49.95 for an individual user, or $450 for ten users.

ARE YOUR GRAPHICS FUZZY?

IF YOU'RE SEEING fuzzy or weirdly colored graphics on the Web, your browser is probably out of date. To download the latest version of Netscape Communicator, head to Netscape's page (home.netscape.com/flash1/download/). To download the latest Internet Explorer, go to Microsoft's page (www. microsoft.com/ie/).

THIS MONTH'S INTERNET SECURITY TIP: SMASH COOKIES WITH COOKIE CRUSHER

DO YOU KNOW of an Internet Explorer plug-in that prevents Web sites from sending cookies? I'm getting tired of clicking *No* all the time.

Richard Rogers
Durham, North Carolina

FIGURE 3: NET.MEDIC WILL keep you abreast of traffic speeds in cyberspace.

Enhancing Your Outlook

BOTH INDEPENDENT Outlook 97 enthusiasts and Microsoft regularly post enhancements and bug fixes for Outlook 97. Here are a few from Microsoft's Web page (www.microsoft.com/outlook/) and other sites.

Microsoft Mail Security Attachment Add-On. This utility alerts you whenever someone sends you an executable file that should be scanned for viruses. It's available free from Microsoft (www.microsoft.com/security/mailaddon.htm).

Rules Wizard. This free Microsoft utility lets you create rules for e-mail handling in Outlook 97. You can tell the e-mail program to inform you when messages arrive from certain addresses, automatically forward those messages to specified folders, or flag them. Head to Microsoft's Web site, click *Search*, and then type **rules wizard**.

WabOut. This free utility will make your Windows address book into an Outlook one (97 or Express). It's available at www.empire.net/~level/WabOut.html.

COOKIE CRUSHER IS a $10 shareware utility that works with both the Microsoft Internet Explorer and Netscape Navigator browsers.

Cookies are bits of code that a Web site sends your browser to track which pages you access (helping you to place merchandise orders online, for example). The cookies remain indefinitely on your hard disk, and some people consider them a violation of privacy.

To use Cookie Crusher, you just start it up, and it loads your browser. Cookie Crusher works with Windows 95 or Windows NT. Download it from The Limit Software (www.thelimitsoft.com), or from PC World Online.

Find files from this article at www.pcworld.com/files and additional tips at www.pcworld.com/hereshow. Internet Tips *welcomes your questions and tips and pays $50 for published items. Contributing Editor Judy Heim is the author of* The Needlecrafter's Computer Companion *(No Starch Press, 1995, 800/420-7240). See page 14 for contact information.* ■

SUBSCRIPTION SAVINGS CERTIFICATE

YOURS FREE!

Plus, 69% off the cover price!

As a special bonus with your order, you will receive the PC WORLD Windows 95 mousepad featuring easy reference and helpful tips to get the most out of Windows 95!

PC WORLD

❑ YES! Enter my subscription to PC WORLD and send my FREE mousepad! I'll pay just $21.97 for 12 monthly issues, that's 69% off the regular newsstand rate.

Name

Company

Address

City State Zip

Savings based on annual newsstand price of $71.40. Please allow 6 to 8 weeks for delivery of your first issue. Foreign orders add $46 postage. Canadian orders add $20 postage plus 7% GST (#R124669680).

4MQR1

Plug into PC WORLD Online now!
http://www.pcworld.com

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT

PO BOX 51833

BOULDER CO 80323-1833

Create

DAZZLING

EFFECTIVE *intriguing* **Impressive**

FLASHY

STUNNING DETAILED

VRML Images

with DesignCAD 97

2D/3D CAD System for Windows 95 or Windows NT

DesignCAD 97 makes .jpg images and 3D VRML files for use on your web page!

Your Creativity is the only limit.

INTERNET READY
- Output JPG, TIF, and TGA files.
- Create 3D VRML files.
- E-mail directly from DesignCAD.

ANIMATION AND PRESENTATION
- True 3D texture mapping.
- Great animation with AVI support.
- New anti-aliasing.

SMART EDITING
- Dozens of innovative editing features to enhance your drawings.

3D SOLID MODELING
- Create virtually any 3D surface with surface construction tools.
- Boolean operations allow precise solid additions, subtractions.

CUSTOMIZATION
- Full keystroke and screen customization.
- OLE automation with Visual Basic and C++.

MORE . . .
- Direct scanner support with bitmap to vector conversion.
- Embed designs into other documents with Windows Clipboard and OLE-2 options.
- Read and save DWG, DXF, IGES, and HPGL file formats.
- DesignCAD Developer's Kit for creating special features.

30 DAY MONEY BACK GUARANTEE

FREE TECH SUPPORT

only $499*

*Competitive upgrade $299

CALL FOR FREE DEMO CD

Call, fax, or e-mail your order to: **800/233-3223**

ViaGrafix

One American Way, Pryor, OK 74361

918/825-7555
fax: 918/825-6359
www.viagrafix.com
sales@viagrafix.com

H-1012-7

Circle 239 on reader service card

The limitations of host-based modems ◆ Phasing out obsolete ISA cards

Troubleshoot Laser Printers

LASER PRINTERS CAN be finicky beasts. And if you don't have a computer professional at your beck and call, someday your printer will mess up and leave you stranded. Here's a guide to handling many common laser printer crises.

GET SOME HELP

AS MURPHY WOULD tell us, your printer will probably go haywire just when you're creating a critical document, one that you need *right now*. When that day comes, you can call on two Windows 95 tools.

First try the Printer Troubleshooter. To launch it, select *Start•Help*, click the *Index* tab, type **tro** in the first edit box, and then double-click *printing problems* in the list that appears. Alternatively, you could go to your printer's Properties screen (open the Printers folder by selecting *Start•Settings•Printers*, right-click the printer's icon, and select *Properties*) and click *Print Test Page*. If there's a problem printing the page, Windows 95 will ask whether you want to launch the Print Troubleshooter.

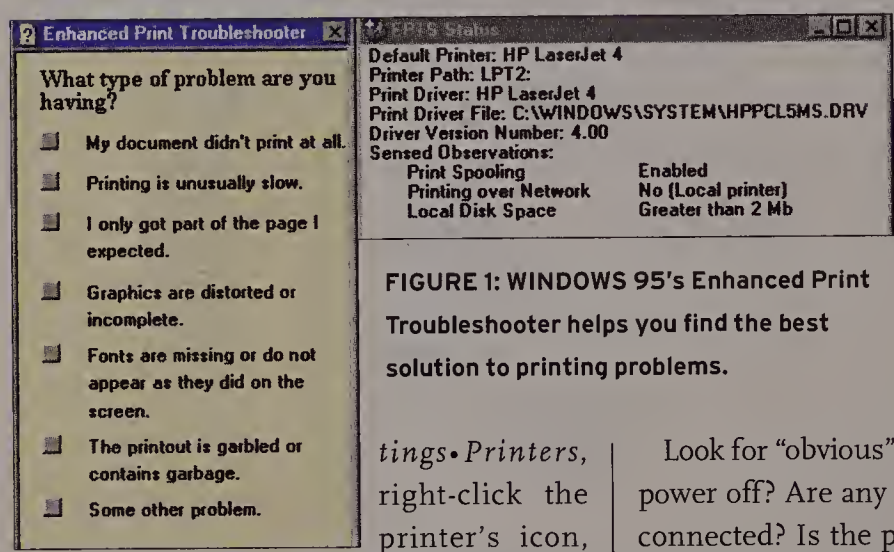


FIGURE 1: WINDOWS 95's Enhanced Print Troubleshooter helps you find the best solution to printing problems.

If that utility doesn't help, try Microsoft's more sophisticated Enhanced Print Troubleshooter, which is located on the Windows 95 CD-ROM in the \Other\Misc\EPTS folder (see **FIGURE 1**). Double-click *epts.exe* or run the program from the command line.

Both utilities cover most Windows 95 setup issues such as spooling settings, available memory, and driver versions. You can also check the printer manufacturer's Web site for a FAQ page or knowledge base. Hewlett-Packard, for example, offers a useful FAQ for laser printers (www.hp.com/cpso-support/laserjet/faq).

CHECK THE BASICS

THE FIRST STEP is to make sure your printer is communicating with the computer. Typically, a button on the printer's control panel toggles it online and offline. After you've confirmed that the printer is online, turn the printer off and on and try printing again. Many printer errors occur apparently at random.

Next, print a test page from your printer—check your manual for instructions. A problem here means that the trouble lies with your printer, not with its cable or software or network connection.

You can also print a test page directly from Windows 95. Go to your printer's Properties dialog box and click the *Print Test Page* button. If the printout appears to be correct, you know you have a suitable driver installed.

Look for "obvious" problems, too: Is the power off? Are any necessary cables disconnected? Is the printer's active paper tray stocked with paper? Does your document specify an odd paper size?

INSIDE THE ROLLER DERBY

IF THESE STEPS don't do the trick, you may well have a paper jam, which means you'll have to open up the printer.

Most moving parts in a laser printer are *rollers* that guide the paper from its tray (or other starting point) through the printing process and out of the printer (see **FIGURE 2**, on page 354). As the paper travels through the printer, it passes under a rotating cylinder called the *photoreceptor*, where it picks up toner—which is the laser printer's equivalent of ink. The paper then moves through the *fuser assembly*, a set of high-temperature rollers that permanently bond the toner to the paper.

Most small and midsize laser printers integrate the photoreceptor into the toner cartridge. As the photoreceptor rotates in the cartridge, it moves past the *charger corona wire*, which places a uniform electrical charge on the photoreceptor's surface. Then a laser beam "writes" an oppositely charged electrical image onto the surface of the photoreceptor. Next, the photoreceptor rotates through the toner reservoir, where toner attaches to the image. Finally, the toner is pulled from the photoreceptor to the paper by an electrical charge placed on the paper by the *transfer corona wire*.

Okay, so much for laser printer mechanics. If you think you're dealing with a paper jam, read your printer's manual for hints on finding the jam. But be careful: There are high voltages in the corona wires, and the fuser assembly can be very hot (see Figure 2 again). Always turn the printer off and, if possible, wait 10 minutes for it to cool down.

When removing the errant sheet of paper, pull gently to avoid tearing it, and try to pull in the normal direction of paper movement. Make sure you remove all bits of paper; check the extracted sheet for tears or missing corners.

Also beware of unfused toner on the paper. Not only is it messy, but stray particles in your printer can cause further trouble. And if you're getting paper jams consistently, examine the rollers nearest the jam; they're often the culprits. You may be able to realign them.

If your paper won't feed correctly when you print, remove all the paper from the tray, gently fan the leading edges with your thumb, and try printing again. Paper tends to curl naturally; unless your manual says otherwise, turn the paper so that it curls under. And make sure the paper is properly inserted in the tray. Check the spring mechanisms that position the paper, which sometimes may need to be tweaked or realigned. ▶

Why Not Buy Your Memory From The Same Place Your Computer Manufacturer Did?

Call Us Direct.

RISK FREE!

We thoroughly test each memory module and stand behind it 100%. That means a lifetime warranty (specific terms and limitations apply) and a 30-day, money-back guarantee on every order.

HASSLE FREE!

Never installed memory before? No problem. Our "It's A Snap" installation guide will have you up and running in just a few minutes. Plus, our technical engineers are ready with FREE support if you need it.

SHIPPED FREE!

Free second-day shipping means you'll receive your order in two days or less. (Orders outside the continental U.S. may take longer.)

16 MB MODULES AS LOW AS $74.00

30-pin SIMM		
1 MB	1x8	$14
4 MB	4x8/9	$37/$43
72-pin SIMM		
4 MB	1x32	$25
8 MB	2x32/36	$44/$69
16 MB	4x32/36	$74/$80
32 MB	8x32/36	$150/$160
72-pin SDDIMM		
4 MB	1x32	$33
8 MB	2x32	$44
16 MB	4x32	$77
144-pin SDDIMM		
8 MB	1x64	$42
16 MB	2x64	$75
32 MB	4x64	$250
168-pin DIMM		
8 MB	1x64	$49
16 MB	2x64/72	$77/$94
32 MB	4x64/72	$149/$176
64 MB	8x64/72	$300/$344

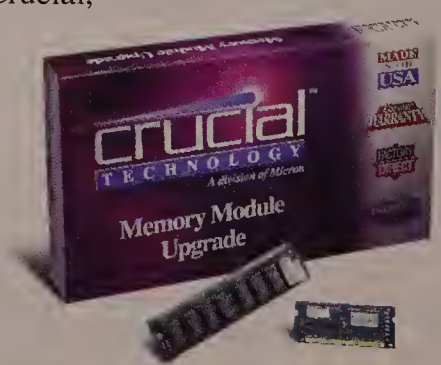
Volume discounts available.

When your computer has a name like Compaq®, Dell®, Hewlett Packard®, or Gateway® you expect a certain level of quality. That's why the top PC manufacturers in the world have installed over 30 million megabytes of Micron RAM. They know they are installing memory they can trust. And now you can too.

Crucial Technology is a division of Micron, one of the largest RAM manufacturers in the world. When you buy Micron memory from Crucial, you are buying the highest quality memory from the most reliable source.

Remember, not all RAM is created equal. Don't trust your computer with anything less than the best.

Memory Is Crucial.℠



Order anytime, anywhere at
www.micron.com/crucial
Or call us at 1-888-363-2570
M-F 7am - 7pm, Sat 8am-3pm, MST

crucial™ TECHNOLOGY
Micron Memory Direct

Crucial Technology, 8000 S. Federal Way, P.O. Box 6, Boise, Idaho 83707-0006 Fax: 208-368-3342 International Sales: 208-368-5081, e-mail: crucial.sales@micron.com
Prices subject to change without notice. Call for current pricing. Corporate names and trademarks stated herein are the property of their respective companies. ©1997, Micron Technology, Inc.

Circle 56 on reader service card

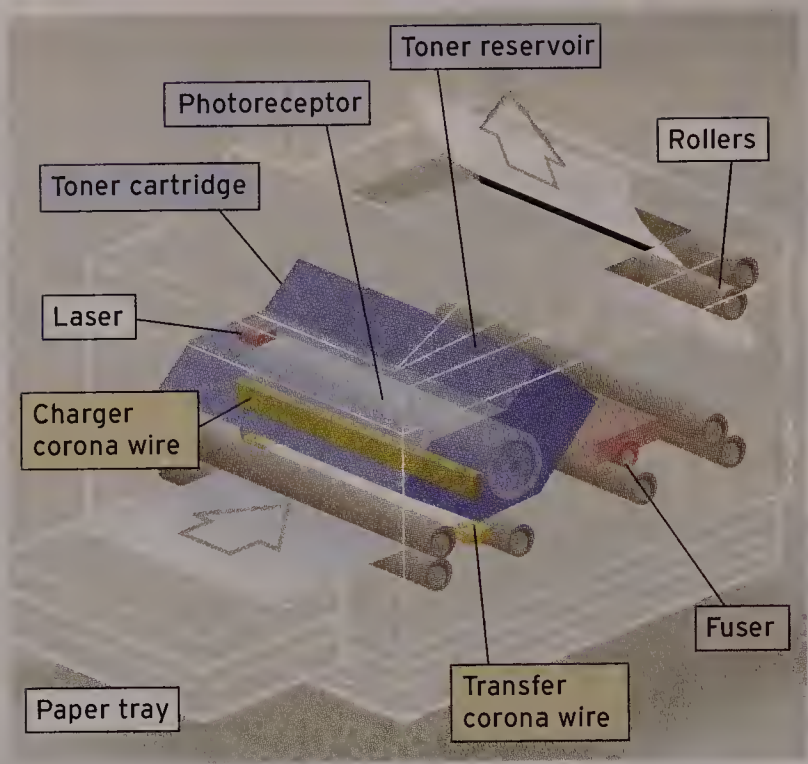


FIGURE 2: HERE'S WHAT'S UNDER THE HOOD of your laser printer. Be careful when you open it up—the corona wires contain high voltages, and the fuser assembly may be hot.

LOOKS ARE IMPORTANT

SO YOU'RE NOT GETTING what you want from your printer? Here's a guide to some common problems.

Scrambled or fragmented images. If the output you're getting is fragmented, in the wrong typefaces, or just plain gibberish, your printer is having trouble processing the image. Check the printer cable connections and try swapping in another cable to eliminate that as the source of trouble. Also check your printer properties to make sure the right driver is installed. Sometimes a driver can become corrupted; you can try reinstalling it with the Add Printer Wizard (click the *Add Printer* icon in the Printers folder). And make sure your parallel port is configured properly; try setting the port to the standard setting in the system setup program.

Uneven print density across the page. The most likely cause is a low toner level. To redistribute the toner more evenly, remove the toner cartridge, holding one end in each hand, and tilt it back and forth. Also make sure the printer itself is level and not near any powerful lights.

Bands of uneven print density running down the page. See your manual for instructions on cleaning the photoreceptor's electrical contacts. If that doesn't help, replace the photoreceptor (which often means replacing the toner cartridge).

Light or gray print everywhere. As a photoreceptor wears out, it doesn't attract enough toner. You can often correct this in the short term by increasing the print density setting on the printer's external control panel or inside the unit itself.

Dark background or echoed images. Decrease the print density.

White patches or vertical white lines. The transfer corona wire may be dirty. Open your printer and look for the wire. If you can reach it, *gently* clean the wire with a cotton swab and alcohol.

All-white pages. The transfer corona wire may be broken. If it is, take the printer in for service.

All-black pages. The charger corona wire (which is probably located in the toner cartridge) isn't working correctly. Remove and replace the toner cartridge to clear the electrical contacts. If that doesn't work, replace the cartridge.

Spots. Spots that repeat in a similar pattern indicate either a damaged photoreceptor, which may call for a new toner cartridge, or a dirty fuser assembly. Call a service technician.

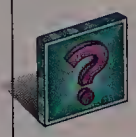
Toner flaking off the page. The fuser is malfunctioning. Call that technician.

Blurry images. Some paper doesn't take well to toner. Blurring also may be caused by moist paper. Try using fresh, dry paper.

SOMEDAY MY PRINTS WILL STOP

NOT ALL PROBLEMS are worth fixing. Eventually, your printer's gears and motors will wear out, and you'll be better off buying a new printer. Expect to get between 20,000 and 40,000 pages from a low-end personal laser printer and more than 100,000 pages from a higher-quality model. Most office lasers should provide at least 300,000 pages. (Check your manual for exact numbers.) Also look for a built-in page counter. Hewlett-Packard's 4P, 5P, and 6P (but not L) series printers, for example, have a counter available through their self-test function.

WHEN MODEMS DON'T KNOW DOS

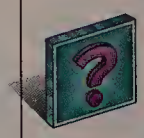


MY FRIEND HAS an internal 33.6-kbps Plug and Play modem that works under Win 95, but it won't work with DOS or even in a DOS window. He wants to use it for playing DOS games. I checked its settings, and none conflict with anything else. Do you have any ideas?

Neil Mortensen, Milford, New Jersey

YOUR FRIEND PROBABLY has a host-based modem such as a Winmodem from U.S. Robotics (now 3Com). Host-based modems depend on software and the computer's CPU to perform many data manipulations that would normally be handled by chips on the modem itself. This makes for a less expensive modem and much easier, software-based upgrades. The downside, of course, is that the modem puts an additional load on the CPU. And, at least in the case of the Winmodem, it requires Windows' multitasking abilities and won't work with DOS.

CAN I STICK WITH MY OLD JOYSTICK?



I'VE READ RECENTLY about manufacturers' plans to eventually abandon the ISA slot. This leaves me wondering about my old 8-bit two-port joystick card. Is it a dinosaur?

Rich Morey, Internet

IT'S BECOMING one. Look for ISA-less motherboards to start appearing early in 1998; prices should fall in the second half of the year as the new motherboards become available in volume.

Even then, you should still be able to use your joystick with the new motherboards, assuming it uses a standard game port. Motherboard manufacturers are seriously concerned with backward compatibility because of the millions of installed peripherals that use the ISA bus.

Hardware Tips *welcomes your questions and pays $50 for published items. Kirk Steers is a* PC World *contributing editor.* *See page 14 for contact information.* ■

Back up your business with a Travan drive and cartridges. Or kiss it all goodbye.

Tax files. Receivables. Customer names. If the unthinkable happens, they're history. Hang on to it with simple, reliable Travan™ backup drives and cartridges, available wherever computers are sold. Travan products are easy to use and made by companies you know and trust. You can use Travan technology to protect irreplaceable data on individual computers or small office networks because Travan cartridges come in sizes from 800 MB to 8 GB. And now the Travan quality you've known from 3M comes to you from an exciting new company, Imation. For the best Travan solution to meet your needs, see www.imation.com or call 1-800-888-1889, ext 6001. And hurry. You never know when your computer's going to take an unscheduled vacation. **We're thinking what you're thinking.**

IMATION
Borne of 3M Innovation

Travan backup system supported by:

HEWLETT PACKARD · Seagate · TANDBERG DATA · TECMAR

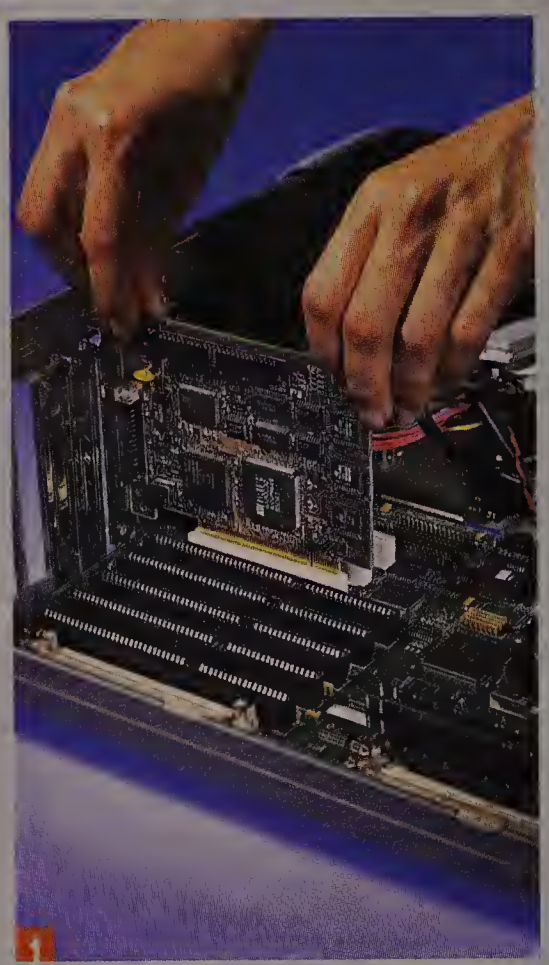
Travan, Imation and the Imation logo are trademarks of Imation Corp. All other trademarks are properties of their respective companies. © Imation 1997.

Install a CD-Recordable Drive

GOT A MOUNTAIN OF DATA and no good way to move it? Check out CD-Recordable drives. They can write up to 650MB of data onto a CD-R disc, are fairly inexpensive and friendly, and aren't much harder to install than standard SCSI CD-ROM drives.

CD-Rs give you an economical way to create backups, store large files such as graphics and databases, and distribute software. If your PC has a sound card and audio editing software, you can also create audio discs that hold up to 74 minutes of music and run on any CD player. If that's not fancy enough, you can build mixed-media discs with data, music, and even video.

You can buy double-speed CD-R drives in the $400-to-$600



Install the SCSI card. If your PC already has a SCSI card installed, make sure it's a high-performance card. (ISA cards may not be quick enough to write CD-Rs.)

If your CD-R drive came with a SCSI card, read the installation instructions.

If you don't have a SCSI card, you'll need to buy one. Since inexpensive ISA SCSI cards lack the performance you need for CD-R recording, buy a PCI bus-master card instead. For example, Adaptec (www.adaptec.com) offers the $129 AHA 2910 PCI connection kit specifically to match CD-R drives.

Remove the cover from your PC, find a free PCI slot, remove the slot cover behind it, and carefully plug in the SCSI card. Screw it down firmly. Don't put the cover back on yet.

If you're installing an external CD-R drive, skip to step 3.

Install an internal CD-R drive. SCSI drives need a unique SCSI ID number between 0 and 7, usually set with jumpers (top left) on an internal drive and with a switch on an external drive. The SCSI card also needs a unique SCSI ID number. SCSI cards usually use ID 7. If the CD-R drive is the only SCSI peripheral, you can probably use the default ID for that drive (usually ID 5). If you're connecting the drive to a cable that's already attached to another SCSI device, make sure there isn't an ID conflict. Refer to your manual, and change IDs as needed.

If the CD-R drive is the last SCSI device on the cable, it must be terminated, usually with a jumper or a plug-in resistor pack. Most drives are terminated at the factory.

You'll need a free 5¼-inch drive bay with front-panel access. Remove the front panel where the CD-R drive will go. Some cases require that you mount rails (top right) to the side of the drive, others don't. If your system doesn't have extra rails, order them from your dealer or from the PC manufacturer. Mount the drive using screws that are normally included with CD-R kits.

Connect a SCSI ribbon cable between the CD-R drive and the internal connector on the SCSI card, making sure to align pin 1 on the cable (indicated by a red line running along the cable's edge) with pin 1 on both the CD-R drive and the SCSI card. If you're connecting the drive to an existing SCSI setup, the ribbon cable should have an extra connector you can use. If not, buy a new SCSI cable.

Plug in a free power connector to the CD-R drive. If needed, purchase a Y-connector that makes two connectors out of one.

PHOTOGRAPHS: KEVIN CANDLAND

range from companies such as Olympus (www.olympus.com), Philips (www.pps.philips.com), Plextor (www.plextor.com), and Sony (www.sony.com/storagebysony/). Blank discs have dropped in price and now cost $6 to $8, less if you buy in bulk.

Today's CD-R drives have licked the compatibility problems that plagued earlier models, so you can be confident the discs you create will play on virtually any CD-ROM drive. And just about any contemporary hard drive is fast enough for recording.

All CD-R drives are SCSI because SCSI provides the performance needed to "burn" a disc, and they all do double duty as CD-ROM readers. Most CD-R drives are rated as only 4X or 6X for reading, but because a SCSI CD-ROM drive doesn't load your computer's processor as much as an EIDE drive does, performance can be better than those numbers indicate.

You'll need a Pentium PC, the faster the better. You can create CD-Rs with a Pentium-90, but you may get bad writes, so a Pentium-133 is a more reasonable minimum. You'll also need a SCSI card, of course. Some CD-R drive kits come with SCSI cards; others don't. And if you're installing an internal drive, read step 2 carefully before you start, to make sure you've got what you need.

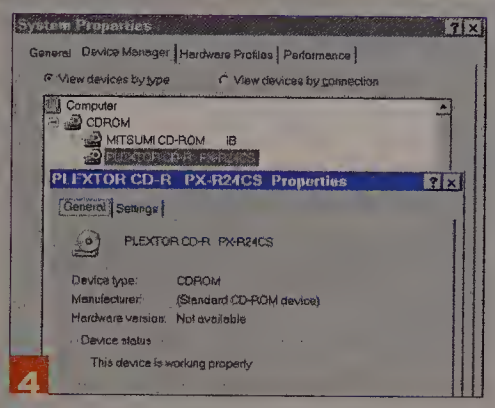
Stan Miastkowski is a PC World *contributing editor.* ■

Install an external CD-R drive. External CD-R drives are easier to install than internal units.

Like any other SCSI device, the CD-R drive needs a unique ID number, which is usually set with a switch on the rear of the external drive (a dial switch is shown, bottom left).

If the CD-R drive is your only external SCSI device, it also must be terminated. Some external CD-R drives have termination switches. Others require you to insert a termination plug (bottom right) included with the drive into one of the two connectors on the rear of the drive case.

Using the cable that comes with the drive, plug the large end into one of the connectors on the rear of the CD-R drive (top). It doesn't matter which connector you use. Plug the other end of the cable into the connector on the rear of the SCSI card. Attach the AC cable to the external drive.

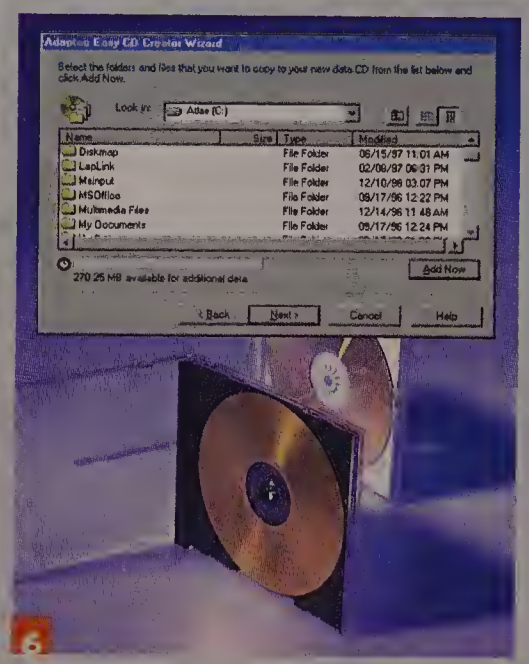


Install the drivers. Turn on your PC. (If you're using an external CD-R drive, turn it on first). If you've installed a new SCSI card, Windows 95 should detect the new card; you may be asked to insert your Windows 95 installation CD-ROM or insert a floppy disk that came with the SCSI card.

Windows 95 should then sense your CD-R drive automatically and install the needed software. You may again be asked for your Windows 95 CD-ROM.

Once Windows 95 is started, confirm that everything's working in Device Manager (as shown above). Check that the drive can read a standard CD-ROM. Power down the PC and put its cover on.

Install the CD-R recording software. Follow the installation directions that came with your CD-R recording software.



Start recording CD-Rs. Most recording software lets you perform a test before you burn a disc—a good idea. Close all other programs before recording, and don't use your PC for another task until you're done.

If you have a hard drive with additional partitions, or a second hard drive, you may want to copy the data for your CD-R onto it. Some software also lets you choose a location for the "Image" file the disc is made from. In that situation, use the extra partition or drive. In any case, remember to defragment all drives regularly.

PC Connection®

7 Time Award Winner! PC WORLD WORLD CLASS Best Mail-Order Company!

Order as late as 3 a.m. ET and still get Overnight Delivery

FAX US AT: 603-446-779

Get the Best for Less!

UPGRADE!

NEW VERSION! Illustrator 7.0
FREE! Pocket Etch-a-Sketch!
Upgrade Only $94.95
40275

Microsoft Windows NT Server 4.0 5-Client Access License
Your certified resource for networking solutions!
Upgrade Only $349.95
31271

Corel WordPerfect Suite 8
NEW VERSION! Win/NT
Upgrade Only $134.95
40795

Visual SourceSafe 5.0
Protects your Web and development projects!
FREE after rebate!
Call for qualifying details!
35973

Epson Stylus Color 600 Inkjet Printer

COLOR!

Breakthrough 1440 x 720 dpi

4ppm photo-quality color! 6ppm black & white!

Only $299
37819

37817 Stylus Color 800..... $449
(8ppm black, 7ppm color, optional int. Ethernet & LocalTalk)

EXCLUSIVE Money-Saving Deal!

100MB Zip Drive & PaperPort Deluxe

19171 - Zip Drive
44022 - PaperPort Deluxe Software

SAVE $50!

Buy Both Only $199.90*
*After mail-in rebate

Visioneer PAPERPORT DELUXE
VISIONEER

Buy VivoActive Producer 2 and get Microsoft FrontPage 97 FREE! A $139.95 value!

VIVO®

Only $599.95
*After $100 mail-in rebate from Vivo
426

Microsoft

Peripherals!

New! High-Speed Memtek 24X CD-ROM
High Speed 24X Drive!
The Fastest Yet!
Only $119.95
43363

PalmPilot Professional & ACT! 3.0
SAVE $50!
Keep up-to-date and in touch!
Maximize your productivity!
$499.95
43520

Sony DSC-F1 Digital Still Camera
$150 Price Drop!
Now Only $699
37680
- Stores up to 108 pictures at 640 x 480 resolution!
- Built-in flash, exposure control!
- Macro mode for close-ups!

56Kbps Sportster Modem
U.S. Robotics
The Intelligent Choice in Information Acc
The Fastest Ever!
ONLY $149.95* Internal
(*after $50 rebate — Expires 10/4/97)
373

NEW! Internet Mouse!
Complete with 5-year warranty & toll-free tech support!
Makes surfing the Web faster & easier!
Only $49.95
43175

HP LaserJet 6Lse Printer
Includes LaserJet Internet Publishing Kit with software from Microsoft & HP on CD-ROM!
$399
40621

Western Digital Caviar Internal 4GB IDE Hard Drive
Award Winning!
36271
$329.95

OptiQuest 17" Monitor
NEW LOW PRICE!
ONLY $499
39387
- .28mm dot pitch
- Up to 1280 x 1024 resolution @ 61MHz

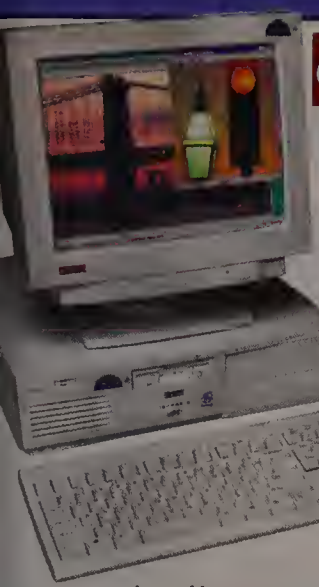
ViewSo

SyQuest SyJet External SCSI Drive
32594
Double your capacity! Buy any SyJet drive now and get an extra 1.5GB FREE! $125 value.
$499
Award Winning!
PC MAGAZINE EDITORS' CHOICE

UMAX Astra 600S Flatbed Scanner
PRICE DROP!
Only $169.95
- 300 x 600 dpi
- Scans legal size documents
- FREE software included!
39394

Capture faster, smoother video images with Connectix Color QuickCam... Then use Embellish to give your Web graphics excitement & impact!
Bundle Only $219.95
43371

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and NOVUS cards. No surcharge. • Most products are covered by manufacturer's warranty against defects for at least 30 days from the invoice date. • All returns require prior authorization; please call for an RMA • We are responsible for typographical errors. • Pricing and promotions are subject to change without notice. Continental U.S.: Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information excessive size and/or weight may require additional days to deliver via a freight carrier. Please check with your sales rep for more details. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next busi Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands: may require additional time and charges. All other areas: Call 603-446-4444 or FAX 603-446-7791 M-F 8 a.m.-5:30 p.m. ET. ©1997 PC Connection, Inc. Marlow, NH. MacConnection & the raccoon characters are registered trademarks of PC Connection, Inc.



digital Business Desktops

Venturis FX2 5166

- 166MHz
- 16MB RAM
- 1.2GB HD

Only $998

monitor sold separately

44206

COMPAQ Deskpro 2000 5166X/2100

Now with MMX®!

NEW!

PLUS:

- 2.1GB Smart EIDE HD
- 16MB SDRAM (384MB Max)
- 256K Cache (512K Max)
- S3 Trio 64V2/GS Video w/1MB SGRAM (2MB Max)
- 3-year warranty

Only $1199

monitor sold separately

42757

Call Us First!

THE BEST PRICES ON PC SYSTEMS!

800-800-CPUs

HITACHI MOBILIZED COMPUTING

Full Multimedia Machine!

VisionBook 4140

42339

Only $1799

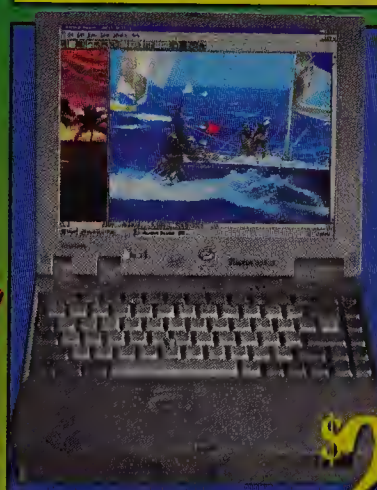
- 133MHz MMx
- 16MB RAM
- 1.4GB HD
- 12.1" HA-STN Screen
- 10X CD-ROM
- 33.6Kbps Modem

SAVE ask about... LEASING OPTIONS for BUSINESS

CALL FOR DETAILS

NEW! Extended Service Plan

Supplement the mfr.'s warranty for 4 full years from date of purchase!



Tecra 500CDT Notebook!

Light in Weight, Long on Performance! Flexible! Expandable!

- 120 MHz Pentium
- 16MB RAM (expandable to 144MB)
- 12.1" Active Display
- 1.26GB Hard Drive
- 6X CD-ROM
- Integrated 28.8 Kbps voice/fax/modem
- 3-Year Warranty

Only $2099

TOSHIBA

16MB RAM FREE!

w/purchase of 500CDT Ask for item #41787 while supplies last

Software!

Business

43103	ClarisWorks Office for PC	$79
27667	FileMaker Pro 3.0 Tradeup/Upgrade	99
44059	ClarisWorks 4.0 Internet Ed. w/FREE Myst	94.95
42228	BusinessBasics	34.95
37596	PTS Photoshop 4.0 Training (Begin, Int, Adv)	79.95*
40794	Corel WordPerfect Suite 8 Win95 * After rebate	294.95

Utilities

32853	Norton Utilities Win 95	74.95
31822	Norton AntiVirus Win 95	69.95
35300	Partition Magic 3.0 CD	49.95*
40879	CyberAngel	79.95
34905	Cybermedia's First Aid 97	34.95
26134	Dr Solomon Anti Virus Tool Kit * After $15 rebate	64.95

Games

40862	Dark Reign	49.95
40505	Aaron vs. Ruth	39.95
32103	STARFLEET ACADEMY	49.95
33248	X-Wing vs. TIE Fighter	49.95

Graphics & Design

43130	NetObjects Fusion 2.0 - NEW LOW PRICE	294.95
39399	PhotoTools 1.1	94.95
41518	Flightcheck for Win	379.95
43162	Adobe Illustrator 7.0 w/FREE PTS Tutorial & CD	369.95

Peripherals!

CD-ROM

38323	Hi-Val 12X Internal IDE	$99.95
43092	Smart & Friendly 2006 Plus Internal CD-R	395
41380	Pinnacle Micro RCDW226 Internal Rewriteable CD-R Drive	699

Printers/Scanners

43463	HP DeskJet 1000Cse Printer	499
40623	HP LaserJet 6Pse Printer	799
40619	HP LaserJet 5se Printer	1049
41479	UMAX PageOffice II C Sheetfed Scanner	179.95
41775	Microtek ScanMaker V 300 Flatbed Scanner	149
39628	Linotype-Hell Jade Flatbed Scanner	499

Storage

19172	Zip 100 Parallel Port	149.95
19171	Zip 100 SCSI	149.95
19872	Zip 100 10-pack media	129.95
23616	Jaz 1GB SCSI External	399.95
32556	Jaz 1GB Disks - 3 pack	299.95

Video

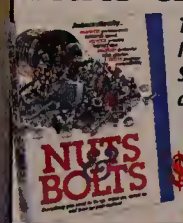
37869	IX Micro Turbo TV	99
40169	Diamond Monster 3D	199.95
39615	Matrox Rainbow Runner	249.95
37778	Magnavox MB7000 17" Monitor	599
43817	NEC MultiSync E700 Monitor	699
43960	ViewSonic OptiQuest V95 19" Monitor	1049
36253	Agfa ephoto Digital Camera	299.95
41600	Nikon Coolpix 100 Digital Camera	699
37680	Sony DSC-F1 Digital Camera	699

SUPER LOW SIMMS!

1MB SIMMS as low as $9.95 13020

4MB	8MB	16MB	32MB
as low as $24.95	as low as $49.95	as low as $99.95	as low as $189.95

Nuts & Bolts



The Only Fully Integrated Utilities Suite for Win 3.1 and Win 95!

Only $39.95*

*$10 Rebate

39592

FREE! Catalog Subscription!

CALL TODAY!

☐ MacConnection ☐ PC Connection

Please check the catalog(s) you wish to receive

(Mention source code 1097PCW)

Name _____

Address _____ Apt ____

City _____ State _____ Zip _____

10,000 HOT PRODUCTS 24 HRS A DAY!

888-800-4534

www.pcconnection.com

Now shop on-line with a name you can trust!

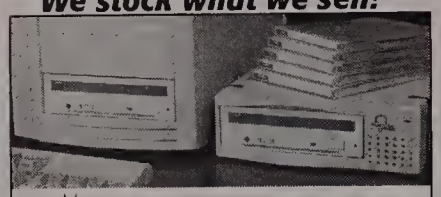
PC AD 1097PCW

Circle 165 on reader service card.

DIRT CHEAP DRIVES

1-800-637-4743

Celebrating our 10th year!
Low Low Prices!
We stock what we sell!



Smart STORAGE SOLUTIONS

BEST BUY CD RECORDERS
TOLL FREE SUPPORT
5 FREE DISKS

2x6 SCSI CD ROM RECORDER
• Packet write compatible, tray loading

Drive Kit	$339
Complete Kit with ISA controller	$389
Complete Kit with PCI controller	$449

4x6 SCSI CD ROM RECORDER
• Packet write compatible, tray Loading

Drive Kit	$579
Complete Kit with ISA controller	$629
Complete Kit with PCI controller	$689

2x8 IDE CD ROM RECORDER
• Packet write compatible, tray Loading

Drive Kit	$379
Complete Kit with ISA controller	$399

2x6 SCSI CD ReWritable!
• CD-R and CD-RW compatible
• Includes 5 rewritable disks

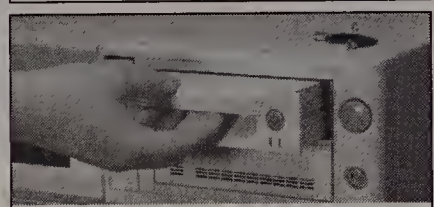
Drive Kit	$549
Complete Kit with ISA controller	$599
Complete Kit with PCI controller	$659

(Drive kit - requires controller)

We will not be undersold on CD media!

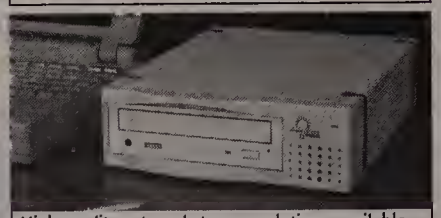
	Alone	with CDR
CDR-74 (with jewel case)		
5 pack (CDR74-5)	$27	$24
20 pack (CDR74-20)	$76	$71
50 pack (CDR74-50)	$17B	$168
100 pack (CDR74-100)	$330	$320
CDR-74 (no jewel case)		
50 disk spindle (CDR745-50)	$16B	$15B
CDR-74W (ReWritable)		
5 pack (CDR74W-5)	$114	$110
20 pack (CDR74W-20)	$382	$377
50 pack (CDR74W-50)	$957	$947

Call for larger quantity pricing.



Converts any 3 1/2" hard drive into a removable drive. Great for transportability, data interchange, or security needs. Mount any 3.5" IDE or SCSI drive in the supplied cartridge, and the frame in a 5.25" drive bay in your computer and you are ready for transportability. Extremely high quality construction. Features built in cooling fan, 5CSI ID switch.

		Extra frame	Extra cartridge
IDE	**$79**	**$49**	**$39**
SCSI	**$B5**	**$54**	**$40**
WIDE SCSI	**$129**	**$75**	**$64**
Weather resistant cartridge carrying case			**$30**



High quality external storage solutions available in parallel or PCMCIA (type 2) interface.

Hard Drive	Parallel	PCMCIA
1.6GB	$299	$399
2.5GB	$349	$449
3GB	$379	$479
4G8	$449	$549
5GB	$519	$619
CD ROM		
16X	$159	$259
24X	$185	$285

DVD
HITACHI
GD-2000

• Supports CDR, and CDRW media
• IDE interface
• DVD-2 Reader, 150ms
• 20X CD ROM, 90ms

Bare Drive **$249**
Drive with PCI DVD/MPEG-2 decoder **$479**

IDE HARD DRIVES

IDE	*RPM*	*Brand*	*Model*	*Price*
1200MB	5400	Fujitsu	M1636T	$165
1275MB	4500	Seagate	5T31277A	$152
12B1MB	5200	Western Digital	AC11200	$152
1300MB	4200	JTS	JT51300	$155
1614M8	5400	Quantum	FB31620A	$170
1624MB	5200	Western Digital	AC21600	$167
1700MB	4500	Seagate	5T31720A	$164
1750MB	4480	Maxtor	MB1750A	$174
1750MB	5400	Fujitsu	MP3017A	$162
2000MB	4500	JTS	JT52000	$170
2000MB	5200	Western Digital	AC22000	$177
2100MB	44B0	Maxtor	M82100A	$187
2111MB	4500	Seagate	5T32122A	$177
2132MB	4500	Seagate	5T32132A	$174
2151MB	5400	Quantum	FB32160A	$1B1
2500MB	**5200**	**Micropolis**	**MC4525A**	**$182**
2557MB	12ms	Seagate	5T32531A	$1B6
2559MB	5200	Western Digital	AC22500	$197
2560MB	5400	Maxtor	M82560A	$204
2620MB	5400	Fujitsu	MP3026A	$188
3000MB	4500	JTS	JTS3000	$199
3166MB	5200	Western Digital	AC33100	$212
3201MB	44B0	Maxtor	MB3201A	$219
3227MB	4500	5eagate	ST332232A	$214
322BMB	5400	Quantum	FB33240A	$212
3245MB	4500	5eagate	ST33240A	$209
3500MB	5400	Fujitsu	MP3035A	$209
4000MB	5200	Western Digital	AC34000	$270
4000MB	5200	Micropolis	MC4540A	$249
4303MB	4500	Seagate	ST34342A	$262
4304MB	5400	Western Digital	AC34300	$290
4310MB	5400	Quantum	FB34320A	$259
4320MB	44B0	Maxtor	M84320A	$2B5
4320MB	3600	Quantum	BF4335A	$211
4326MB	4500	5eagate	ST34340A	$259
4370MB	**5400**	**Fujitsu**	**MP3043A**	**$242**
5000MB	5200	Micropolis	MC4550A	$329
5120MB	5400	Maxtor	MB5120A	$352
5160MB	5400	Western Digital	AC35100	$365
5250MB	**5400**	**Fujitsu**	**MP3052A**	**$309**
6448MB	5400	Quantum	FB36480A	$357
6450MB	5400	5eagate	5T36450A	$379
6480MB	3600	Quantum	BF6510A	$323
7000MB	5200	Maxtor	M87000A	$439

SCSI HARD DRIVES

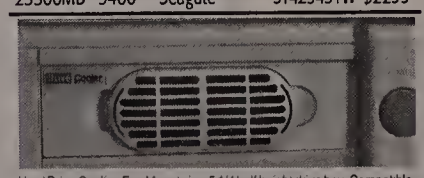
Add a DPT 2044U Ultra SCSI controller $249

SCSI	*RPM*	*Brand*	*Model*	*Price*
1050MB	5400	5eagate	ST31055N	$242
2150MB	5400	Seagate	5T52160N	$239
2150MB	7200	Seagate	5T32171N	$479
2151MB	5400	Quantum	FB32160S	$235
2160MB	7200	5eagate	5T32272N	$475
2275MB	7200	Quantum	VK32275S	$407
3228MB	5400	Quantum	FB332405	$299
4100MB	**7200**	**Micropolis**	**MC4341**	**$549**
4300MB	5400	Micropolis	MC4743	$369
4310MB	5400	Quantum	FB34320S	$362
4400MB	7200	Fujitsu	M29545	$559
4550MB	7200	Micropolis	MC4345	$599
4550MB	7200	Micropolis	MC4345AV	$685
4550MB	7200	Seagate	ST34572N	$689
4550MB	7200	Quantum	VK345505	$609
4550MB	7200	Quantum	XP345505	$699
4550MB	10,000	Seagate	ST34501N	$779
6448MB	5400	Quantum	FB36480S	$469
9100MB	**7200**	**Micropolis**	**MC3391**	**$985**
9100MB	7200	Fujitsu	M29495	$979
9100MB	7200	Quantum	XP39100S	$1049
9100MB	7200	Micropolis	MC3391AV	$1119
9100MB	7200	5eagate	5T19171N	$1059
9100MB	10,000	5eagate	5T19101N	$1179
23300MB	5400	Seagate	ST423451N	$2199

WIDE HARD DRIVES

Add a DPT 2044UW Ultra Wide SCSI controller for $279

WIDE	*RPM*	*Brand*	*Model*	*Price*
1050MB	5411	5eagate	5T31055W	$329
2160MB	7200	5eagate	5T32272W	$510
2275MB	7200	Quantum	VK32275W	$415
4300MB	**5400**	**Micropolis**	**MC4743W**	**$Call**
4400MB	7200	Fujitsu	M2954W	$569
4550MB	7200	Micropolis	MC4345W	$619
4550MB	7200	Micropolis	MC4345WAV	$709
4550MB	7200	Seagate	5T34572W	$740
4550MB	7200	Quantum	VK34550W	$615
4550MB	7200	Quantum	XP34550W	$705
4550MB	10,000	Seagate	5T34501W	$825
9091MB	**5400**	**Micropolis**	**MC3391W**	**$1039**
9091MB	5400	Micropolis	MC3391WAV	$1139
9100MB	7200	Fujitsu	M2949W	$1019
9100MB	7200	Quantum	XP39100W	$1059
9100MB	7200	Seagate	5T19171W	$1069
9100MB	10,000	Seagate	ST19101W	$1265
23300MB	5400	Seagate	5T423451W	$2299



Hard Drive Cooling Fan Mounts in a 5 1/4 half height drive bay. Compatible with any 3 1/2" hard drive. Features twin cooling fans and a washable air filter. A must for 7200 and 10,000 RPM drives. (CHDFAN) $30

CD ROM DRIVES

IDE CD ROM

Speed	Brand	Model	ms	Int
12X	CyberDrive	CYBER12X	150	$79
16X	Toshiba	XM6002B	90	$B7
16X	Mitsumi	CRMCFX16X	120	$92
16X	NEC	CDR1600	100	$B9
1BX	Acer	AC616A	120	$92
20X	Lite On	LTN202A	120	$88
24X	**Delta**	**DELTA24X**	**99**	**$89**
24X	Panasonic	CR585	85	$104
24X	Mitsumi	CRMCFX24X	90	$109
24X	Toshiba	XM6102B	B5	$115

IDE CD CHANGERS

Speed	Brand	Model	# Disks	Int
6X	NEC	CDR4X6	4	$89
BX	NEC	CDR4X8	4	$105
12X	Panasonic	SQTC512N	5	$266

ACCESSORIES

Buy a CD drive & sound card & get a FREE audio cable.
Creative Labs 5ound Blaster 16 Value PnP (SBIDE) $69
Creative Labs Sound Blaster AWE64 (5B64AWE) $100
Creative Labs 5ound Blaster AWE64 (5B64AWEGOLD) $1B0
Professional speakers with Bose style swivel speakers and separate subwoofer.
25 Watt (SPEAKERJR) $99 35 Watt (5PEAKERPRO) $129
Universal sound cable(AUDIOMIX) $9
Turn any IDE CD ROM into an external for parallel printer port (PPCASECD) $B9
Turn any IDE CD ROM into an external for PCMCIA port (PCMCIACASECD) $1B9

SCSI CD ROM

Speed	Brand	Model	ms	Int
12X	Toshiba	XM5701B	115	$139
12X	Plextor	PX12TS(tray)	105	$209
12X	Plextor	PX12C5(caddy)	105	$259
15X	Toshiba	XM3801B	99	$159
16X	NEC	CDR1610	100	$149
20X	Plextor	PX20TS	95	$229

SCSI CD CHANGERS

Speed	Brand	Model	# Disks	
4X	Pioneer	DRM624X	6 (ext)	$419
16X	Nakamichi	MJ516	5	$239

SCSI CD TOWERS

			4 Drive	7 Drive
15X	Toshiba	99ms	$999	$1729
16X	NEC	100ms	$929	$1659
20X	Plextor	95ms	$1399	$2499

SCSI CD TOWERS w/ 5 Disc Changers

Nakamichi 16X 150ms $1399 $2399
Ethernet adapter option available. Call.

CD RECORDERS

Sony 2x6
Internal SCSI drive (CDU9265) $309*

Yamaha 4x6
Internal SCSI drive tray load (YCDR400T) $619*
Internal SCSI drive caddy load (YCDR400) $649*

Philips 2x6
Complete kit includes software, and 1 disk
Internal SCSI (CDD2600) $399

Hewlett Packard SureStor 6020I
SureStor 6020I includes software, and 1 disk
Internal SCSI (C4343CDR) $369
Complete internal kit w/ controller (C4343CDR-1) $409
External for parallel printer port (C4345A) $545

Sony 2x8
Internal IDE (CDU9285) $349*
Kit w/ 1 disk, and software compatible with Win 95 & Win NT 3.51 & up. Req IDE controller. (CDU92B5KIT) $369

Mitsumi 2x6
IDE Kit includes 3 disks, and software compatible with Win 95 & Win NT 3.51 and up. Requires IDE controller.
Internal (CRMC2600TE) $415
*Drive must be purchased with CDR software or media.

ULTRA IDE HARD DRIVES

FUJITSU					
1750MB	10ms	5400	MP3017U	3	$167
2620MB	10ms	5400	MP3026U	3	$193
3500MB	10ms	5400	MP3035U	3	$214
4370MB	10ms	5400	MP3043U	3	$247
5250MB	10ms	5400	MP3052U	3	$314
QUANTUM					
1614MB	10ms	5400	FB31620A	3	$170
2151MB	10ms	5400	FB32160A	3	$1B1
3228MB	10ms	5400	FB33240A	3	$212
4310MB	10ms	5400	FB34320A	3	$259
644BMB	10ms	5400	FB364B0A	3	$357
MAXTOR					
7000MB	10ms	5200	MB7000A	3	$439
SEAGATE					
2111MB	12ms	4500	ST32122A	3	$177
3227MB	12ms	4500	ST33232A	3	$214
4303MB	12ms	4500	5T34342A	3	$262
WESTERN DIGITAL					
4304MB	11ms	5400	AC34300	3	$290
5160MB	12ms	5400	AC35100	3	$365

Promise PCI Ultra IDE Controller (ULTRA33) with drive ***$50***

We Can: Install any of these drives in external enclosures, and custom configure to your specifications.

TAPE DRIVES

EXABYTE

3.5-7Gig	8mm, 32MB/min, EXBB205XL	$11B9
7-14Gig	8mm, 120MB/min, ELIANTB20	$1529
7-14Gig	Bmm, 60MB/min, EXBB700LT	$679
7-14Gig	8mm, 60MB/min, EXBB700	$919
(EXBB700 includes: 1 tape, 1 cleaning tape, and backup software)		
20-40Gig	8mm, 360MB/min, EXBB900	$3679
70-140Gig	Bmm, 60MB/min, EXB10H	$4239

HEWLETT PACKARD

2Gig	DAT, 11MB/min, C1534AI	$579
2-4Gig	DAT-DC, 42MB/min, C1536AI	$609
4-BGig	DDS-2 DAT, 60MB/min, C1599AI	$799
12-24Gig	DD5-3 DAT, 120MB/min, C1554AI	$1119
72-144GB	DDS-3 DAT, 120MB/min, C5648A	$2699

SEAGATE

2-4Gig	DAT-DC, 66MB/min, STD24000N	$5B9
4Gig	Mini, 29MB/min, TST8000	$339
4-BGig	DDS-2 DAT, 66MB/min, STD28000N	$795
12-24Gig	DDS-3 DAT, 132MB/min, STD224000N	$1059
4B-96Gig	DDS-2 DAT, 48MB/min, C45B6NP	$1B79

SEAGATE MINI CART
Prices include Dos/Win backup software & 1 tape

B00MB	TR1, TSTB00R $B9	Parallel ver	$129
3.2Gig	TR3, TST3200 $179	Parallel ver	$1B5
4-BGig	TR4, TSTB000 IDE or SC5I		$339

SONY

4-BGig	DD5-2 DAT, 44MB/min, SDT5000AI	$695
4-BGig	DDS-2 DAT, 90MB/min, SDT7000AI	$759
12-24Gig	DD5-3 DAT, 144MB/min, 5DT9000AI	$1039
32-64Gig	DDS-2 DAT, 90MB/min, TSL7000X	$2099

QUANTUM

15-30Gig	DLT, 150M8/min, DLT2000XT	$2549
20-40Gig	DLT, 1B0MB/min, DLT4000	$3299
75-150Gig	DLT loader, 150MB/min, DLT2500XT	$4B49
100-200Gig	DLT loader, 180MB/min, DLT4500	$6319
105-210Gig	DLT loader, 150MB/min, DLT2700XT	$6649
140-2B0Gig	DLT loader, 1B0MB/min, DLT4700	$B249

REMOVABLE DRIVES

IOMEGA 100MB ZIP

Internal SC5I for PC (ZIP100I)	$145
Internal IDE for PC (ZIP100A)	$139
External SCSI for PC or Mac (ZIP100)	$145
External for PC parallel port (PPZIP100)	$145
100MB disks (ZIP100C) Qty 2-9/Qty 10+	$1B/$14

IOMEGA 1Gig JAZ

Internal 5CSI with 1 disk (JAZI)	$285
External SCSI in our case with 1 disk (JAZEX)	$34B
External 5CSI in Iomega case with 1 disk (JAZX)	$3BB
Disks Qty 2-4/5-9/10+ 1Gig	$B7/$B5/$B2

SYQUEST 230MB Flyer

Ext. SCSI (EZ230S)	$190
Ext Parallel(EZ230PP)	$190
Extra Disks Qty 2-4/5-9/10+	$2B/$26/$24

SYQUEST 1.5GB SyJet

Int. 5C5I (SYJET1.5PCI)	$36B
Ext 5C5I (SYJET1.5PCX)	$459
Extra Disks Qty 2-4/5-9/10+	$B6/$B4/$B2

OPTICAL DRIVES

FUJITSU Call about 5 Free Disks w/640MB Drives!
230MB •128MB compatible, 30ms, 3600rpm
Internal IDE w/ 1 free disk (M2541AC) $279
640MB • 230MB r/w & 128MB read compatible, 2MB buffer
Internal SCSI w/ 1 free disk (M2513A2WC) $419

MAXOPTIX
2.6Gig • (1.3Gig, 650MB r/w compatible) , 1MB buffer
Internal SCSI (TAHITI2.6) $1439

TORAY
6S0MB • PD drive 650MB rewritable and 4X CD ROM in one.
SCSI Kit w/ controller & 1 disk Int (PWK650) $349

SMART STORAGE SOLUTIONS
4.6Gig •2.6Gig compatible, 19ms,
Internal SC5I & 1 disk (SSS4.6WC) $1399

Optical Disks (LIFETIME WARRANTY) 2-4/5-9/10+

12BMB	[TJ128]	$14	$12	$10
230MB	[TJ230]	$15	$13	$11
540MB 3 1/2"	[TJ540]	$2B	$26	$22
640MB 3 1/2"	[TJ640]	$30	$2B	$26
1.2GB 512K	[TJ1.2]	$33	$31	$29
1.3GB 1024K	[TJ1.3]	$33	$31	$29
2.3GB 512K	[TJ2.3]	$45	$43	$41
2.6GB 1024K	[TJ2.6]	$45	$43	$41

M- F 8am - 8pm, Sat 9am - 3pm CST
24hr ordering at www.dirtcheapdrives.com

VISA MasterCard NOVUS

We are a major supplier to Government, Educational, Fortune 1000, and Institutions. PO's and Bids accepted.

DIRT CHEAP DRIVES
3716 Timber Drive, Dickinson, Texas 77539
Local (281) 534-4140 - Fax (281) 534-6452

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. All returns are subject to a restocking fee. No refunds on software or special orders (items not listed in ad.) We reserve the right to refuse any sale. Personal checks held for clearance.

10/97 PC World

Circle 147 on reader service card

CELEBRATE AS PCs COMPLEAT JOINS THE NEW COMPUSA DIRECT.

1-800-670-9541

www.compusa.com

FREE OFFERS INSIDE!

GRAND OPENING FREE

CALL WHILE SUPPLIES LAST.

THE NEW COMPUSA DIRECT

Advantage!

The service and experience of PCs Compleat combined with the selection, support and incredible buying power of CompUSA Direct®. We offer more than 130 store locations nationwide for: hassle-free drop-off technical service, product returns and exchanges.

- ✓ Over 50,000 products
- ✓ Knowledgeable, helpful service
- ✓ Guaranteed low pricing
- ✓ Same day shipping for second day delivery on in-stock items
- ✓ Professional on-site installation available at reasonable prices
- ✓ Custom configuration
- ✓ Free software installation with system purchase
- ✓ Toll-free technical support for hardware and software
- ✓ Hassle-free drop-off technical service at over 130 CompUSA® Computer Superstores℠ locations nationwide
- ✓ On-site technical service available
- ✓ Technology Assurance Program™ support/repair coverage
- ✓ Computer and software training at CompUSA training facilities
- ✓ Flexible payment plans
- ✓ Money-back satisfaction guaranteed (Call for details)

NO PAYMENTS, NO INTEREST! FOR 6 MONTHS

On everything we sell. No minimum purchase. Must be paid in full within 6 months from date of purchase. Offer valid until the next issue of this magazine or 60 days, whichever comes first. ¹No Payments/No Interest Financing Details. ²Subject to credit approval. Applies to purchases made with the CompUSA consumer credit card. Accrued finance charges will be assessed from the original date of purchase if balance is not paid in full within six months. As of June 25, 1997, The CompUSA credit card annual percentage rate (APR) is 22.30%. APR's vary; minimum monthly finance charge of 1.00 may apply. Credit is provided by Beneficial National Bank USA.

THE NEW COMPUSA DIRECT

Superstore Savings Direct To You℠

1-800-670-9541

www.compusa.com

FREE VCR & SCANNER

Purchase a desktop computer containing a 166MHz or greater Processor and get a FREE VCR and Scanner!

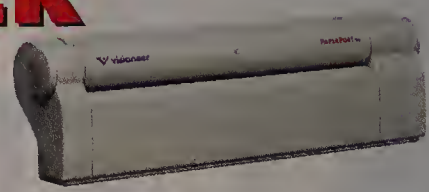
Limit 2 per customer. Product may differ slightly from photo.

or VISIONEER

FREE SCANNER

Purchase any desktop computer and get a FREE PC compatible Scanner!

Limit 2 per customer.



FREE VCR & CARRYING CASE

MICRO™ CASE

Purchase any notebook computer containing a 166MHz or greater Processor and get a FREE VCR and Carrying Case!

Limit 2 per customer.

or

FREE CARRYING CASE

Purchase any notebook computer and get a FREE Carrying Case to help protect your investment!

Limit 2 per customer.

FREE

Broderbund®

PrintShop Deluxe III!

Purchase any Canon, Epson, NEC or Okidata printer and get PrintShop Deluxe III FREE!

Limit 2 per customer.

FREE*

PowerCenter Deluxe!

	Price Before Rebate
	30.00
Mfr. Mail-In Rebate	-30.00▲
	0.00
	Price After Rebate

Limit 2 per customer.
*Free after Manufacturer Mail-In Rebate.

FREE*

Ergonomic Keyboard Drawer!

Improve your posture!

	Price Before Rebate
	25.00
Mfr. Mail-In Rebate	-25.00▲
	0.00
	Price After Rebate

Limit 2 per customer.
*Free after Manufacturer Mail-In Rebate.

FREE

Internal Modem!

When you purchase Microsoft Office 97 upgrade. Four powerful applications to help manage information: Excel 97, Word 97, PowerPoint 97 and Outlook 97!

	Price Before Rebate
	219.95
Mfr. Upgd. Mail-In Rebate	-40.00▲*
	179.95
	Price After Rebate

Limit 2 per customer.
*Proof of ownership required. 021-00703

FREE*

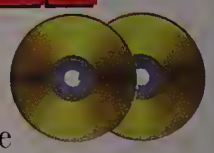
3.5" DS/HD Diskettes, 50-Pack!

IBM-Preformatted.

	Price Before Rebate
	15.00
Mfr. Mail-In Rebate	-15.00▲
	0.00
	Price After Rebate

Limit 2 per customer.
*Free after Manufacturer Mail-In Rebate

FREE*



Recordable CDs 2-Pack

650MB of data or 74 minutes of audio.

	Price Before Rebate
	10.00
Mfr. Mail-In Rebate	-10.00▲
	0.00
	Price After Rebate

Limit 2 per customer.
*Free after Manufacturer Mail-In Rebate.

OFFERS AVAILABLE THROUGH MAIL ORDER AND THE INTERNET ONLY.

OFFERS & REBATES!

LIMITED TIME OFFER!

OFFERS AVAILABLE THROUGH MAIL ORDER AND INTERNET ONLY.

200.00 OFF ANY TOSHIBA NOTEBOOK (EXCLUDING DEMOS AND REFURBS)

intel inside pentium PROCESSOR

TOSHIBA

Satellite 220 CDS

- 133MHz Pentium® Processor
- 1.4GB Hard Drive
- 16MB RAM
- 10X CD-ROM Drive
- 12.1" Dual-Scan Display

Price Before Rebate 1999.95
Instant Rebate -200.00
1799.95 Price After Rebate
PA1240U-52G

YOUR CHOICE $300 INSTANT REBATES

Packard Bell.

MMX™ intel inside pentium® PROCESSOR

PLT2015

- 166MHz Pentium® Processor with MMX™ Technology • 2.1GB Hard Drive • 32MB RAM • 16X CD-ROM Drive • 33.6/14.4 Data/Fax Modem

Monitor sold separately. While supplies last.

Price Before Rebate 1299.95
Instant Rebate -300.00
999.95 Price After Rebate
B42941

IBM®

intel inside pentium PROCESSOR

LIMITED TIME OFFER!

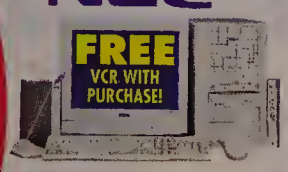
ThinkPad 560

- 133MHz Pentium® Processor • 8MB RAM
- 2.1GB Hard Drive Plus CD
- 12.1" Active Matrix Display

Price Before Rebate 3899.95
Instant Rebate -300.00
3599.95 Price After Rebate
264020U
While supplies last.

$200 INSTANT REBATE

NEC



intel inside pentium PROCESSOR

Ready 9701SE

- 166MHz Pentium® Processor
- 2.1GB Hard Drive • 16MB RAM • 56K*/14.4 Data/Fax Modem • 16X CD-ROM Drive
- 16-Bit 3D Surround Sound with Software Wavetable • 64-Bit PCI Accelerated Graphics

*56K Modems are capable of downloads at 56Kbps, but speeds in actual use may vary. Monitor sold separately. While supplies last.

Price Before Rebate 1299.97
Instant Rebate -200.00
1099.97 Price After Rebate
102-00197

$100 INSTANT REBATES

COMPAQ

intel inside pentium PROCESSOR

NEC

- 17" Color Monitor • .28 NI
- 15.8" Viewable Image Size
- 1280x1024 • 60Hz

Price Before Rebate 599.95
Instant Rebate -100.00
499.95 Price After Rebate
JC-1734VMA-FR3C

Presario 4122 Remanufactured

- 150MHz Pentium® Processor
- 2.5GB Hard Drive
- 16MB RAM
- 8X CD-ROM Drive
- 33.6/14.4 Data/Fax Modem

Monitor sold separately. While supplies last.

23B200-003
Price Before Rebate 899.95
Instant Rebate -100.00
799.95 Price After Rebate

$50 INSTANT REBATES

Microsoft Office 97 Professional

Five powerful applications that work together and alike: Excel 97, Word 97, PowerPoint 97, Access 97 and Outlook 97.

Price Before Rebate 539.95
Instant Rebate -50.00
489.95 Price After Rebate
353-00005

Packard Bell.

14" Color Remanufactured Multimedia Monitor

- 13.1" Viewable Image Size
- 1024x768 Resolution
- .28 NI
- Integrated Stereo Speakers

Price Before Rebate 199.95
Instant Rebate -50.00
149.95 Price After Rebate
018277-FR

FREE PRINTSHOP DELUXE III WITH PURCHASE!

EPSON

Stylus 500 Inkjet Remanufactured Color Printer

- 720x720dpi Resolution
- 4ppm
- PC and Mac® Compatible

Price Before Rebate 199.95
Instant Rebate -50.00
149.95 Price After Rebate
C19B011-FR

THE NEW COMPUSA DIRECT

GET THE COMPUSA ADVANTAGE WITH MORE THAN 130 STORES NATIONWIDE FOR TECHNICAL SUPPORT AND SERVICES!

1-800-670-9541
www.compusa.com

Circle 129 on reader service card

FREE VCR WITH PURCHASE OF ANY P166 OR GREATER COMPUTER!

PLUS 200.00 OFF ANY TOSHIBA NOTEBOOK COMPUTER!*

*Remanufactured and demos excluded.

intel inside pentium PROCESSOR

SAVE 200.00!

FREE EarthLink Internet Access! Purchase any desktop or notebook computer and get EarthLink FREE for 30 days! A 45.00 Value!

Satellite 220CDS

TOSHIBA
Satellite 220CDS

- 133MHz Pentium® Processor
- 1.44GB Hard Drive • 16MB RAM
- 10X CD-ROM Drive
- 12.1" Dual-Scan Display

Price Before Rebate 1999.95
Instant Rebate -200.00
1799.95 Price After Rebate
PA1240U-S2C

Toshiba 440CT	Pentium® 133MMX™, 12.1" Active, 16MB, 1.4GB, 10X CD-ROM	PA1241U-T2C	3299.95-200IR=3099.95
Toshiba 520CDT	Pentium® 166MMX™, 12.1" Active, 32MB, 2GB, 10X CD-ROM	PA1246U-T2A	4699.95-200IR=4499.95
Toshiba 530CDT	Pentium® 166MMX™, 12.1" Active, 32MB, 2.1GB, 10X CD-ROM	PA1247U-T2A	5099.95-200IR=4899.95

KiWi

intel inside pentium PROCESSOR

280B
- 133MHz Pentium® Processor
- 1.08GB Hard Drive • 16MB RAM
- 10X CD-ROM Drive • 11.3" Dual-Scan Display

ONLY 1599.95 280B

Kiwi 7B0C P166MMX, 12.1" Active Matrix Display, 64MB, 2.0GB 780C 3499.95

IBM

MMX™ intel inside pentium® PROCESSOR

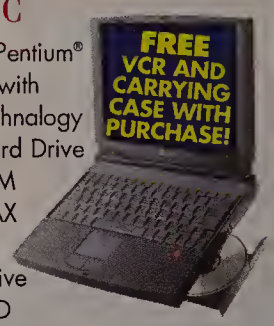
NEW!

ThinkPad 560
- 150MHz Pentium® Processor with MMX™ Technology • 2.1GB Hard Drive • 16MB RAM • 11.3" Dual-Scan Display

ONLY 2799.95 264030U

SONY
PCG-707C

- 166MHz Pentium® Processor with MMX™ Technology
- 2.1GB Hard Drive
- 32MB RAM
- 14.5X MAX CD-ROM
- 12.1" Active Matrix LCD Display



MMX™ intel inside pentium® PROCESSOR

ONLY 4499.95 PCG-707C

Sony PCG-705C Pentium® 150MMX™, 12.1" Active Matrix Display, 16MB, 2.1GB PCG-705C 3499.9

FREE SCANNER WITH THE PURCHASE OF ANY DESKTOP COMPUTER!

COMPAQ
Presario 2200

- 180MHz Processor with MedioGX
- 1.6GB Hard Drive
- 16MB RAM
- 8X CD-ROM Drive
- 33.6 Modem Upgradable to 56K
- Premier Sound Audio System

ONLY 799.95 292600-004 Monitor Sold Separately. While Supplies Last.

Presario 2200 with 14" Monitor, 13.2" Viewable Image Size 292600-004-KIT 999.95
14" V410 Monitor, 13.2" Viewable Image Size 2B5706-001 229.95

intel inside pentium PROCESSOR

AST COMPUTER
Bravo MS-T Minitower Computer

- 100MHz Pentium® Processor
- 2.0GB Hard Drive • 16MB RAM/192 MB Max • 7 Drive Bays total • One-Year On-site Warranty

Price Before Rebate 999.95
Instant Rebate -100.00
899.95 Price After Rebate
501955-401
Monitor Sold Separately. While Supplies Last.

200 MHz ONLY 999.95!

COMPAQ
Presario 4504

- 200MHz Pentium® Processor
- 2.1GB Hard Drive
- 16MB EDO RAM
- 16X CD-ROM Drive
- 33.6 Modem Upgradable to 56K
- 64-Bit 3D Graphics
- 16-Bit Stereo Sound
- JBL Pro Speakers

intel inside pentium PROCESSOR

ONLY 999.95 304300-003 Monitor Sold Separately. While Supplies Last.

HEWLETT PACKARD Pavilion

NEW LOW PRICE!

MMX™ intel inside pentium® PROCESSOR

Pavilion 7420

- 166MHz Pentium® Processor with MMX™ Technology
- 2.5GB Hard Drive • 32MB RAM
- 16X CD-ROM drive

1499.95
Price Break -200.00
1299.95

While Supplies Last. Monitor Sold Separately. D5248A#ABA

digital™

intel inside pentium PROCESSOR

Venturis FX5166

- 166MHz Pentium® Processor
- 1.6GB Hard Drive
- 16MB RAM • 8X CD-ROM
- 16-Bit Stereo Sound

ONLY 1299.95 FR-AA5AW-JB Monitor Sold Separately. While Supplies Last.

1-800-670-9541
www.compusa.com

GET THE COMPUSA ADVANTAGE WITH MORE THAN 130 STORES NATIONWIDE FOR TECHNICAL SUPPORT AND SERVICE.

THE NEW COMPUSA DIRECT

GRAND OPENING VALUES!

OFFERS AVAILABLE THROUGH MAIL ORDER AND THE INTERNET ONLY FOR A LIMITED TIME!

Maxtor

1.6GB IDE Hard Drive

- 256k Cache Buffer
- Less Than 11ms Average Access Time
- 16.7mb/sec Data Transfer Rate

AVAILABLE THROUGH MAIL ORDER AND INTERNET ONLY.

K0181750A

Price Before Rebate 149.95
Mfr. Mail-in Rebate -50.00▲
Price After Rebate 99.95

HI VAL

Recordable CD-ROM

- 6x Read/ 2x Write

USA6WI-OR7

Price Before Rebate 349.95
Mfr. Mail-in Rebate -50.00▲
Price After Rebate 299.95

Recordable CDs

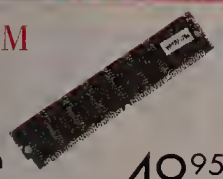
- 74 Minutes of Audio
- 650MB of Data

622880

Price Before Rebate 49.95
Mfr. Mail-in Rebate -20.00▲
Price After Rebate 29.95

UPGRADE YOUR MEMORY

16MB SIMM Memory Upgrade



4x32, 72pin Non-Parity

49.95
4X32

8MB Upgrade	72pin, Non-Parity	2X32	29.95
32MB Upgrade	72pin, Non-Parity	8X32	129.95

2967051V100

Microsoft Natural Keyboard

- Correctly Position Your Hands
- Work in Comfort

Price Before Rebate 69.95
Mfr. Mail-in Rebate -10.00
Price After Rebate 59.95

Kodak digital science SOLUTIONS

Digital Camera DC-120

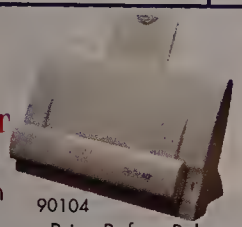
8524399

- Focus-free Lens
- Built-in Automatic Flash
- 3X Motorized Zoom Lens
- Resolution: 1280x960dpi

Price Before Rebate 999.95
Price Break -200.00
Price After Rebate 799.95

SAVE 100.00 ON AN EIGER 10MB MEMORY CARD WHEN YOU PURCHASE A KODAK DC-25, DC-50 OR DC-120 DIGITAL CAMERA!

SPOT The Smart Player of Technology



PageTak Color Scanner

90104

- Optical Resolution 300x300dpi
- Scanning Resolution 4800dpi with Software Enhancement
- Sheet-fed Scanning Method

Price Before Rebate 149.95
Instant Rebate -50.00
Price After Rebate 99.95

U.S. Robotics

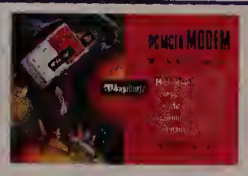
Sportster 33.6/14.4 Data/Fax Internal Modem

001125-0

- Upgradable to 56K
- 5-Year Warranty

Price Before Rebate 69.95
Mfr. Mail-in Rebate -20.00▲
Price After Rebate 49.95

Megahertz



XJ2288B

Sportster 28.8/14.4 Data/Fax PC Card Modem

Price Before Rebate 149.95
Price Break -80.00▲
Price After Rebate 69.95

HI VAL

CD-ROM Drives

USA16A-00W

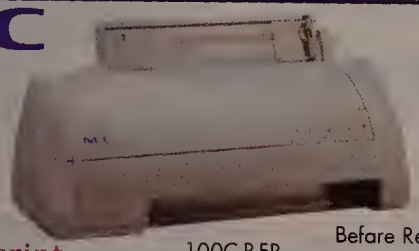
- 16X CD-ROM Drive
- IDE Controller Included

Shipped in pramatianal packaging.

Price Before Rebate 119.95
Instant Rebate -40.00
Price After Rebate 79.95

20X CD-ROM Drive	USA20A-00W	99.95
20X Multimedia Kit	USA20A-01W6	149.95
24X CD-ROM Drive	USA24A-00W	119.95

NEC



SuperScript 100C Inkjet Printer Remanufactured

100C-R-FR

- Black Print 600x300dpi at 3ppm
- Color Print 300x300dpi at 2-4ppm

Price Before Rebate 129.95
Instant Rebate -30.00
Price After Rebate 99.95

EPSON

Stylus Pro Color Remanufactured Inkjet Printer

C164001-FR

- 720x720dpi Black and Color
- Up to 4ppm Black
- 1ppm Color

Price Before Rebate 249.95
Instant Rebate -50.00
Price After Rebate 199.95

HEWLETT PACKARD

Hewlett-Packard LaserJet 6Lse Printer

- 600x600dpi at 6ppm Black
- More than 128 levels of grey

399.95
C3994A#ABA

We'll beat any legitimate price in the current issue of this magazine on every product we sell. CompUSA Direct prices are available through mail order and the Internet and are valid until the next issue of this magazine, or 30 days from the date of this issue, whichever comes first. Our low price guarantee pertains to new, factory sealed products of the same brand and model number that are available and in stock at any local authorized retail store. Our guarantee does not apply to competitors' one-of-a-kind or other limited-quantity offers, special financing, installation, manufacturer's rebate, or when a bonus or free offer is included in the purchase. Some restrictions apply. Prices and specifications are subject to change without notice. We reserve the right to limit quantities. All Hayes modems, laser printers and some other printers, monitors and laptops must be sent to authorized service centers. Any typographical, photographic, or production error in products, pricing or offers is subject to correction. Due to manufacturers' restrictions, certain products may not be eligible for international shipment, and certain products may not be available via mail order. Please call for details. Monitor displays are simulated. Pentium, the Intel Inside and Pentium Processor logos are registered trademarks and MMX is a trademark of the Intel Corporation. Windows is a registered trademark of Microsoft in the U.S. and other countries. Packard Bell is a registered trademark of Packard Bell Electronics, Inc. IBM is a registered trademark and Aptiva and Total Image Video are trademarks of International Business Machines Corporation, used under license therefrom. All other trademarks are the property of their respective companies. Items, other than software, returned within ten (10) days from the date of purchase with the original receipt or invoice are eligible for refund or exchange. Unopened software may be returned within thirty (30) days for refund or exchange. Opened software may be returned for exchange only within ten (10) days from the date of purchase. A restocking will be charged on all returned items with missing boxes or packaging and returned printers with installed toner or inkjet cartridges. Refunds on purchases made with a credit card will only be credited to the same card. ▲In Connecticut only, instant rather than mail-in rebate. Superstore Savings Direct To You, CompPrice, The Low Price Period and America's Largest Computer Superstore are service marks of CompUSA Management Company. CompUSA and CompUSA Direct are registered trademarks of CompUSA Management Company. ©1997 CompUSA Management Company.

1-800-670-9541
www.compusa.com

INTERNATIONAL: 508-786-0600
OPEN 7AM-MIDNIGHT WEEKDAYS. 8AM-MIDNIGHT WEEKENDS AND HOLIDAYS.
Circle 129 on reader service card

THE NEW COMPUSA DIRECT

PC Mall

The Mall With It All...For Less!

We'll Beat Computer

We'll beat any price from any authorized catalog reseller on any CPU we offe

COMPAQ Notebooks and Desktops!

Powerful Compaq Notebook and Desktop Features at an Ultra-Low Price!

Compaq Presarios

as low as $799 #97918

Presario 4000
Monitors sold separately

Presario 2200

Order#	Model	Pentium® Processor	RAM	HD	CD	Modem	Price
#97918	2200	180MHz Media GX	16MB	1.6GB	8XCD	33.6	$799
#97471	4504	200MHz	16MB	2.1GB	16XCD	33.6	$999
#97469	4508	200MHz w/MMX	24MB	3.2GB	16XCD	33.6	$1,499
#97470	4528	233MHz w/MMX	32MB	3.2GB	24XCD	33.6	$1,899
#97444	4814	233MHz w/MMX	32MB	6.5GB	24XCD	33.6	$2,299
#97468	4824	233MHz w/MMX	32MB	6.5GB	24XCD	33.6	$2,699

Presario NoteBooks

New!

- 12.1" high-contrast DSTN/TFT display
- 150MHz Pentium® processor or 150 and 166MHz Pentium® processor w/MMX™ technology
- 128-bit accelerated graphics
- 16MB SyncDRAM; 80MB max
- Premier Sound Audio System
- 14X Max4 CD-ROM drive
- 1.4GB/1.6GB hard drive

Integrated 14X Max 4 CD-ROM drive, modem and diskette drive means you don't have to swap out devices.

as low as $2,299 #97787

Order#	Model	Pentium® processor	RAM/HD/CD	MODEM	Display	Price
#97787	1210	150MHz	16MB/1.4GB/14X	33.6K	12.1" DSTN	$2,299
#97786	1610	150MHz w/MMX	16MB/1.6GB/14X	56K	12.1" DSTN	$2,699
#90234	1080	166MHz w/MMX	16MB/1.4GB/10X	33.6K	12.1" TFT	$3,499

DeskPro 2000 Series

- 166MHz, 200MHz or 233MHZ Pentium® processor w/ MMX™ technology
- 16 or 32MB RAM
- Up to 3.2GB HD
- 16X CD-ROM
- 3D acceleration
- 2MB VRAM

Monitor is sold separately
DeskPro 4000 & 6000 also available please call.

as low as $1,239 #97422

MMX™ technology

Order#	Model	Pentium® processor w/MMX™ technology	RAM	HD	CD	Housing	Price
#97422	5166x/2100	166MHz	16MB	2.1GB		Dsktp	$1,239
#97423	5166x/3200	166MHz	16MB	3.2GB		Dsktp	$1,309
#97424	5166x/3200/CDS	166MHz	16MB	3.2GB	16X	MTwr	$1,619
#97425	5200x/2100	200MHz	16MB	2.1GB		Dsktp	$1,389
#97426	5200x/3200	200MHz	32MB	3.2GB		Dsktp	$1,579
#97427	5200x/3200/CDS	200MHz	32MB	3.2GB	16X	MTwr	$1,769
#97428	5233x/3200/LDS	233MHz	32MB	3.2GB	16X	Dsktp	$1,949

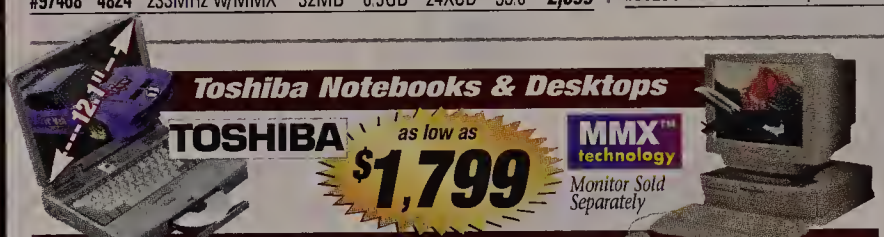
Toshiba Notebooks & Desktops

TOSHIBA

as low as $1,799

MMX™ technology

Monitor Sold Separately



TECRA™ Notebook Series

Order#	Model	Pentium® Processor	RAM	HD	CD	Display	Wt (lb.)	Price
#87602	510CDT	133MHz	16MB	2.02GB	10XCD	12.1" TFT	8.4	$2,899
#97054	520CDT	166MHz w/MMX*	32MB	2.0GB	10XCD	12.1" TFT	8.4	$4,349
#90505	740CDT	166MHz w/MMX*	16MB	2.02GB	10XCD	13.3" TFT	8.4	$4,849
#97055	530CDT	166MHz w/MMX*	32MB	2.0GB	10XCD	12.1" TFT	8.4	$4,799

Satellite™ Notebook Series

#96390	220CDS	133MHz	16MB	1.44GB	10X	12.1" DSTN	7.1	$1,999
#97050	440CDX	133MHz w/MMX*	16MB	1.44GB	10X	12.1" HCAD	6.9	$2,449
#97051	440CDT	133MHz w/MMX*	16MB	1.44GB	10X	12.1" TFT	6.9	$2,949
#97052	460CDT	166MHz w/MMX*	32MB	2.0GB	10X	12.1" TFT	6.9	$3,849

*Intel Pentium® Processor with MMX™ technology versions.

Equium Desktop Series

							Expansion slots	
#92960	5160D	166MHz w/MMX*	32MB	2.1GB	12X	2MB	2PCI slot	$1,399
#92962	5200D	200MHz w/MMX*	32MB	2.5GB	12X	2MB	2PCI slot	$1,549
#92964	6200D	200MHz Pro	32MB	3.0GB	12X	2MB	2PCI slot	$2,099
#92966	6200M	200MHz Pro	32MB	4.3GB	12X	2MB	2PCI slot	$2,499
#98174	6260M	266MHz PII	32MB	4.6GB	16X	2MB	4PCI slot	$2,549

IBM Super-Low Prices on IBM Notebooks and Desktops!

New!

as low as $1,749 #94279

ThinkPad 380 Series

- 12.1" DSTN/TFT SVGA display with IBM's exclusive Tech-Wide Angle
- Full-size 85-key keyboard with palm rest and Track Point with QuickStop finger control

Exclusive! Get a FREE 28.8 PCMCIA Modem with Your Purchase of a ThinkPad 380
Ask for item #86141
$9.99 S & H applies
While supplies last.

Order#	Model	Pentium® Processor	RAM/HD/CD	Display	Weight (lb.)	Price
#94279	380	150MHz	16/1.08GB	12.1" DSTN	6.6	$1,749
#94280	380D	150MHz	16/1.35GB/8X	12.1" DSTN	7.1	$1,999
#94278	380D	150MHz MMX™	16/2.1GB/8X	12.1" TFT	6.9	$3,299

PC 300GL Models New Low Prices!

- 133 or 166MHz Pentium® processor with MMX™ technology
- 16MB EDO RAM (128 max)
- 1.2 and 2.5GB HD
- 64-bit graphics, PCI/ISA bus technology, 1MB DRAM
- 4 slots and 4 bays

as low as $989 #93274

Monitor sold separately

Order#	Pentium® Processor	RAM	HD	CD	System	(lb.)	Price
#93274	166MHz	16	1.2GB	—	Win® 95	6.6	$989
#97038	166MHz	16	2.5GB	—	Win® 95	7.1	$1,099
#92204	166MHz MMX™	32	2.5GB	16X	Win NT 4.0	6.9	$1,399

New Sony Notebooks SONY®

Portable Power!

SLIM (1.5") PROFILE AND ONLY 5.3 LBS.

- 166MHz Pentium® Processor w/ MMX™ Technology
- 12.1" SVGA Active Matrix LCD Display
- 32MB SD-RAM, 128MB max.
- Ultra-slim and light
- Removable 2.1 GB HD
- Rich Software Bundle!!!
- Integral 33.6Kbps modem 14.4/Kbps fax with Built-in speaker phone
- "Sony Tuned" MPEG Digital Video Playback
- Removable 14.5X CD-ROM drive
- Remote Control Headphones

only $4,499 #99242

Intel Pentium® processor with MMX™ technology

VisionBook Plus HITACHI

The Value-Priced, Integrated Notebook Solution

- 133 or 150MHz Pentium® processor w/MMX™ technology 166MHz
- 16MB EDO RAM (128MB max.)
- 12.1" SVGA TFT Display (4150x and 4360x)
- Removable 1.44 or 2.1 GB HD
- 10X CD-ROM with swappable 3.5" floppy drive
- Full-size keyboard
- Sound Blaster Pro compatible
- U.S. Robotics 33.6Kbps modem

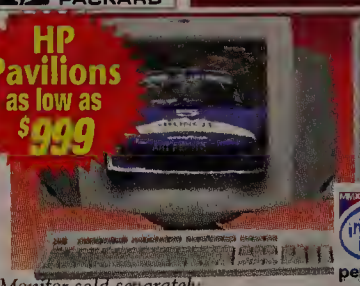
as low as $1,799 #97990

Intel Pentium® processor with MMX™ technology

Order#	Model	Pentium® Processor	RAM/HD/CD	Display	Price
#97983	Plus 4140	133MHz	16MB/1.4GB/10X	12.1" DS	$1,799
#97984	Plus 4150x	150MHz w/MMX	16MB/1.4GB/10X	12.1" TFT	$2,499
#97985	Plus 4360x	166MHz w/MMX	16MB/2.1GB/10X	12.1" TFT	$3,499

HEWLETT PACKARD HP Pavilion Blowout!

HP Pavilions as low as $999



Iomega Zip Drive Install (model 7330Z on

1-Year ON-SITE WARRANT

HURRY! Limited Supp

Monitor sold separately

HP Pavilion 7320 PC

- 166MHz Pentium® processor w/MMX™ technology
- 16MB RAM (Exp. to 128MB)
- 2.1GB hard drive
- 256K pipeline burst cache
- 33.6Kbps DSVD fax/data modem
- 16X Max CD
- HP/Altec Lansing speakers
- Factory Refurbished—1 yr. warranty

While supplies last! only $999 #98412

HP Pavilion 7330Z PC

- 166MHz Pentium® processor w/MMX™ technology
- 32MB RAM (Exp. to 128MB)
- 2.5GB hard drive
- 256K pipeline burst cache
- 33.6Kbps DSVD fax/data modem
- 16X Max CD
- Iomega Zip Drive w/100MB disk
- HP/Altec Lansing speakers
- Factory Refurbished—1 yr. warran

only $1,149 #98411

Order#	HP Pavilion Displays	Pr
#98225	15" HP Pavilion Multimedia Monitor (Fac. Refur.) (.28mm)	$2
#98226	17" HP Pavilion Multimedia Monitor (Fac. Refur.) (.28mm)	$5

We carry over 7,000 Software Products!

Microsoft · COREL · Lotus · Novell · Adobe · SYMANTEC · macromedia · CyberMedia

PC WORLD

69% Savings Plus a Free CD

☐ **Yes.** Send me PC WORLD and my FREE PC WORLD CD-ROM! I'll pay just $21.97 for 12 monthly issues–69% off the annual newsstand rate.

Also, please rush my FREE CD-ROM!

NAME _____

COMPANY _____

ADDRESS _____

CITY / STATE / ZIP _____

Please allow 6-8 weeks for delivery of your first issue. Canadian orders please add $20 USD per subscription for postage plus 7% GST (#R124669680). All other countries send $67.97 USD to PC World, P.O. Box 55029, Boulder CO 80322-5029. Printed in the USA. Savings based on newsstand rate of $71.40.

4MQT4

PC WORLD CD-ROM

Loaded with over 60 great Shareware programs — including complete applications, utilities, Internet tools, games, video clips and more. This CD-ROM is absolutely FREE!

Please Accept Your FREE GIFT!

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

SUBSCRIPTION DEPARTMENT
PO BOX 51833
BOULDER CO 80323-1833

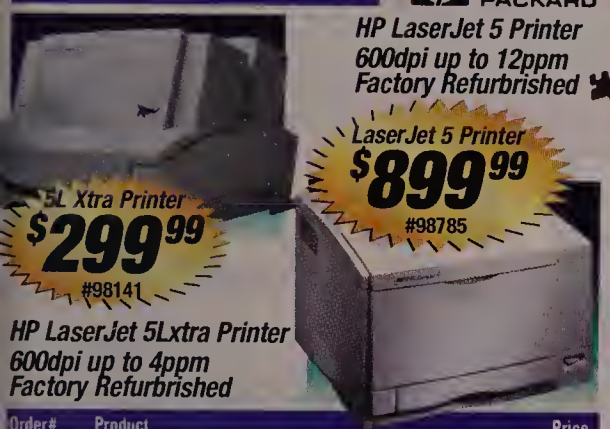
Any Price!

all us before you order from anyone else. We want your business!

Order and Register to **WIN** A Brand New **Mercedes!** Call for details.

HP LaserJet Printer Blowout!

HEWLETT PACKARD



HP LaserJet 5 Printer 600dpi up to 12ppm Factory Refurbished

LaserJet 5 Printer $899.99 #98785

5L Xtra Printer $299.99 #98141

HP LaserJet 5Lxtra Printer 600dpi up to 4ppm Factory Refurbished

Order#	Product	Price
#79668	HP LaserJet 5P printer (factory refurbished)	$499.99
#98786	HP LaserJet 6P printer (factory refurbished)	$699.99
#97457	HP LaserJet 5m printer (factory refurbished)	$1,299.99
#98784	HP DeskJet 1600C color printer (factory refurbished)	$799.99

FREE! Carrying Case w/Any Notebook Purchase!

ISA Combo Ethernet Adapter w/Any Desktop Purchase!

Pay only $9.99 for Shipping and Handling. Ask for #98604

Your #1 Source for Memory

Give Your CPU a Performance Boost!

PNY · Simple Technology · Kingston Technology

4MB AS LOW AS $24 #4468
8MB AS LOW AS $39 #4177
16MB AS LOW AS $59 #65416

FREE Grounding Wrist Strap with any memory purchase! Ask for #92518

SuperDisk LS-120 Floppy Drive

Store 120MB on a Floppy Drive!

- Downward compatible with both 1.44MB and 720KB floppies
- Provides 83 times the storage capacity of standard 1.44MB diskettes

3.5" LS-120 Diskette #83753

1-4 ea.	5-9	10+
$17.99 ea.	$14.99 ea.	$12.99 ea.

External unit pictured

$149.99 PC Mall Price
-50.00 Mail-In Rebate
$99.99* Your final cost after rebate*
#98238
Internal unit

New! Arriva

Fastest Modem Ever...56Kbps!

U.S. Robotics — as low as $88.99

1 Year In-Home Warranty

Get WebPainter FREE when you buy a modem from PC Mall Add $3.99 S&H applies

Order#	Product	Price
#97968	Sportster 56K External Fax Modem	$167.99†
#97967	Sportster 56K Internal Fax Modem	$147.99†
#97974	Sportster 56K External Fax/Voice Modem	$187.99†
#97973	Sportster 56K Internal Fax/Voice Modem	$167.99†
#98437	Sportster 33.6 External Fax Modem	$118.99*
#98436	Sportster 33.6 Internal Fax Modem	$88.99*
#98435	Sportster 33.6 External Fax/Voice Modem	$138.99*
#98434	Sportster 33.6 Internal Fax/Voice Modem	$108.99*

†After $50 mail-in rebate. Rebate expires 10/04/97.
*After $20 mail-in rebate. Rebate expires 10/04/97.

Exclusive Zip and Jaz Deals!

Fuji 100MB Zip Disks when you buy a 10 pack now only $9.99 ea.!
Price after $20 mail-in rebate. #87482

BLOWOUT! Iomega® 100MB Zip™ Drive w/1 FREE Disk Factory Refurbished — only $109.99 #98525

Jaz Insider 1GB Drive w/FREE Gravity Internet Newsreader Software — only $299.99 #98021

#98022 Jaz 1GB External w/FREE Gravity Newsreader $399.99

OfficeConnect Hubs

as low as $68.99

3Com — Life Time Warranty

- Installs in under 10 minutes
- 4, 8 or 16 RJ-45 10Base-T connections
- Ergonomic design saves space and ensures silent operation

Order#	Product	Price
#88096	TP4 4-Port 10Base-T Hub, (4) RJ-45	$68.99
#88097	TP4/Combo 4-Port 10Base-T Hub, (4) RJ-45, (1) BNC, (1) AUI	$98.99
#81612	8TPO 8-Port 10Base-T, (8) RJ-45	$104.99
#81613	8TPC 8-Port 10Base-T, (8) RJ-45 with BNC Uplink	$146.99
#81614	8TPM 8-Port 10Base-T, (8) RJ-45, Manageable, with BNC Uplink	$368.99
#88098	TP16C 16-Port 10Base-T Hub, (16) RJ-45, (1) BNC	$244.99
#87046	8TP100 8-Port 100Base-TX, (8) 100/RJ-45	$654.99

Western Digital Blowout!

1.2GB EIDE Hard Drive

- 11MS Access Time
- Easy installation

FREE PowerQuest Drive Copy #98473 (8" S & H applies)

only $149.99 #97783

Order#	Manufacturer	Product	Price
#98810	Maxtor	Crystal Max/2.1GB/EIDE	$188.99
#95264		Crystal Max/3.0GB/EIDE	$224.99
#90693	Seagate	Medalist 1720/1.7GB/EIDE	$182.99
#92137		Medalist 2132/2.1GB/EIDE	$184.99
#92185		Barracuda/2.1GB/Ultra SCSI	$508.99
#90251		Barracuda/4.3GB/Ultra SCSI	$751.99
#82744	Quantum	Fireball 3.2GB/EDIE	$288.99
#92187	Fujitsu	M 16XX Series/1.7GB/EIDE	$185.99
#92188		M 16XX Series/2.1GB/EIDE	$189.99
#90695	Western Digital	Caviar AC22100/2.1GB/EIDE	$194.99
#90696		Caviar AC22100/4.0GB/EIDE	$322.99
#92383		Enterprise 2.1GB/SCSI-3	$451.99
#97950		Enterprise 4.3GB/Ultra SCSI	$659.99

Super-Fine Pitch Graphic Displays! SONY®

New Low Prices!

- Digital Multiscan™ Trinitron® Technology to support multiple resolutions
- Super-Fine Pitch™ Aperture for minimized "doming" effect
- Cylindrically-flat screen, Deep Black Screen, Plug-n-Play
- FREE speakers with 100sx and 100sf displays

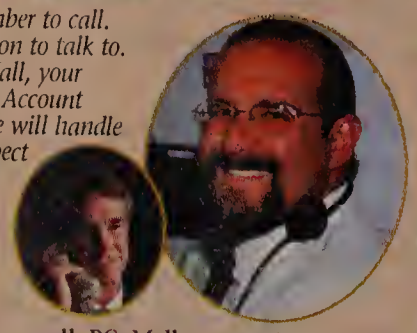
get FREE Sony Speakers

3 Year Warranty

Order#	Model	CRT Size	Viewable Image Size	Apertura Grille Pitch	Suggested Resolution	Price
#93415	CPD-100SX	15"	13.9"	.25mm	1280 x 1024	$349.99
#93464	CPD-100SF	15"	13.9"	.25mm	1024 x 768	$399.99
#86867	CPD-200SX	17"	15.9"	.25mm	1280 x 1024	$689.99
#86868	CPD-200SF	17"	15.9"	.25mm	1280 x 1024	$799.99
#77253	GDM-17SE2T	17"	16.0"	.25mm	1280 x 1024	$899.99
#88223	CPD-300SFT	20"	19.1"	.30mm	1280 x 1024	$1,499.99
#88222	GDM-20SE2T	20"	19.1"	.25mm	1600 x 1200	$1,999.99
#94399	GDM-W900	24"	22.5"	.25/.28mm	1920 x 1080	$4,799.99

PC Mall's Personal Account Executive Service!

One number to call. One person to talk to. At PC Mall, your Personal Account Executive will handle every aspect of your account.



When you call PC Mall, you get your own Personal Account Executive. They'll handle everything from product advice to making sure your order is delivered on time. Call us and discover why thousands of PC users already insist upon PC Mall for their PC equipment.

We'll Beat Any Computer Price!

We offer the lowest computer prices in the business! Just try us! See a system you want listed for less somewhere else? Call us up, let us know and we'll beat it.

Fastest Overnight Delivery!

Order as late as 11:00 p.m. EST and we'll deliver it to you via FedEx by 10:30 a.m. the next day.

Over 45,000 Products!

You'll be sure to find what you need in PC Mall's $1.8 billion inventory—which includes over 45,000 products from the best names in PCs, printers, software, memory upgrades, monitors and more!

Custom Configuration!

Pick your RAM, hard drive size, video card, even any software you'd like pre-installed and have our technicians configure your system for you. Simply take your system out of the box, plug it in, and you're in business.

Order On-Line!

Come visit our newly redesigned, constantly updated Web site at http://www.pcmall.com! You can check prices, order products and even order software electronically using our ESD service!

No Credit Card Surcharges

VISA · MasterCard · American Express · Discover Novus

We accept Visa, MasterCard, American Express and Discover!

Open Account • We accept P.O.s. Call us today to set up an account!

Leases • Lease anything from one PC to one hundred for truly affordable rates!

Volume Licensing • Supply your entire office with the latest software versions for less!

Prices and specifications subject to change without notice. Limited to stock on hand. IMPORTANT: While we do our best to check errors, mistakes may occur—call to verify pricing.

Call Today to get Your FREE PC Mall and DataCom Mall Catalogs!

PC Mall

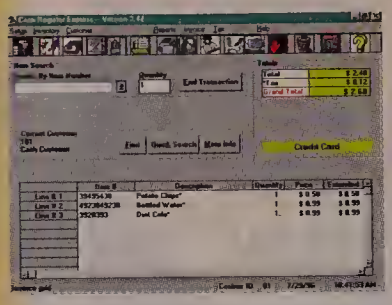
Use Source Code #ZPCW7A1

CALL Toll-Free **1-888-932-2490**

Circle 183 on reader service card www.pcmall.com

Cash Register Express Software
for Windows...$495

Computerize any type of retail store using Cash Register Express for Windows. Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. Cash Register Express



has more than 250 of the most desired point of sale features to help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

More Software for Your Retail Store

- Video Express
- Salon Express
- Auto Express
- RestaurantPro Express
- Barcode Express
- Label Works
- Inventory Track Express
- Credit Card Software
- All Single or Multiuser

All PC America Software requires Microsoft Windows. The software was written in Visual Basic using Microsoft Access Files. The source code is available.

CASH REGISTER EXPRESS™

More Profit!

More Sales!

More Customers!

Save Time, Reduce Theft, Speed Checkout, Increase Accuracy, Reduce Costs, Make Better Business Decisions by computerizing your Retail Store.

SYSTEMS START AT $495.

Barcode Scanners ~~$495*~~
Metrologic, Symbol, NJCR, Percon, PSC

Receipt Printers ~~$299*~~
Star, Ithaca, Citizen, Epson

Barcode Printers ~~$799*~~
Cognitive Solutions Barcode Bla

Pole Displays ~~$289*~~
Logic Controls

Cash Drawers ~~$189*~~
MMF, Logic Controls, Indiana, APG

Programmable Keypads ~~$495*~~
Logic Controls, Cherry, Genovation

Credit Card Readers ~~$189*~~
Unitech, Mag-Tek

*All prices depend on make and model.

Portable Data Collectors ~~$695~~
American Microsystems AMS300

Dealers Wanted!

Join our dealer program. It's **FREE**. It's the fastest way to make money...**AND** we make it **EASY**.

MORE INFO?

- Call Toll Free 1-800-722-6374
- www.pcamerica.com
- Fax on Demand 1-914-267-3551

1-800-PC-AMERICA

Call Toll Free 1-800-722-6374
PH: 914-267-3500
FX: 914-267-3550

PC America
60 N. Harrison Ave.
Congers, NY 10920

AMERICAN EXPRESS VISA MasterCard

Circle 195 on reader service card

CDW COMPUTER DISCOUNT WAREHOUSE

The right price.
The right advice.

"Great prices, superior service"™

AST

Ascentia P30, P50
8MB $97.24 72097 16MB $149.78 72098
Ascentia J10, J20, J30, J50, J55
8MB $69.46 68811 16MB $129.47 68809
32MB $249.30 68810

Cisco Systems

Router 3500, 2500 series
8MB $86.83 77730 16MB $139.72 77731

COMPAQ

Armada 1120
8MB $67.25 71879 16MB $119.31 71880
Armada 4110 series, 4120 series, 4130 series
8MB $94.46 74915 16MB $147.42 74917
32MB $269.74 74918
Deskpro 2000, 4000, 6000
8MB $63.54 74165 16MB $119.58 74166
32MB $219.37 74167
LTE Elite 5000 series
8MB $85.15 62465 16MB $147.42 62466
32MB $267.51 62467 64MB $544.41 62468
Prolinea 2500
32MB $279.41 79833 64MB $637.03 79834
128MB $1229.41 79835
Prolinea 5000, 5000R
64MB $604.27 71875 128MB $1119.64 71876
256MB $2534.78 71877 512MB $4966.30 71878
Presario 962, 9536, 9546, 9548, 972, 982, 974, 992, Prolinea P75, P90
8MB $63.13 54679 16MB $117.86 54680
32MB $219.37 54682 64MB $425.00 54681
Presario 7200 series
8MB $64.51 68815 16MB $119.58 68812
32MB $219.37 68813 64MB $409.06 68814

FUJITSU

LifeBook 555TX, 655TX, 635T
8MB $71.53 83130 16MB $128.78 80765
32MB $309.89 80426

GATEWAY 2000

STG-Pent/P5-75, 90, 100, 120, 133, 150, 166 Family PC, P5-100, 120, 133, 150, 166 BestBuy
8MB $64.51 57571 16MB $119.58 57572
32MB $219.37 57573 64MB $425.00 57575
Solo V75 Deluxe, V90, S90, S90 Deluxe, S90 BestBuy, Solo 2100
8MB $134.96 62795

HEWLETT® PACKARD

LaserJet 4 Plus, 4M Plus, 4MV, 4V, 5MP, 5P, 5si MX, 6P, 6MP
4MB $31.56 43306 8MB $59.02 42443
LaserJet 4, 4M
4MB $44.60 32151 8MB $83.11 32568
LaserJet 4si, 4si MX
4MB $44.60 43307 8MB $74.93 37583

HITACHI

MX series, 133T, 150T, 166T
8MB $97.24 85193 16MB $149.78 85195

IBM

PC 300 model 330, 340, PC 700 model 730, 750 A, E, N, B, F, P
8MB $64.51 74840 16MB $119.58 72593
32MB $219.37 72594
PC 300-300GL
8MB $81.26 90286 16MB $148.76 90287
32MB $269.44 90288
ThinkPad 365E, 365ED
16MB $126.71 63579
ThinkPad 365, X, XD series, 560, 760 E, ED, EL, ELD
8MB $68.12 69680 16MB $128.08 69704
32MB $284.49 71913

IBM

ThinkPad 340, 345C, CS, 355, 360C, CS, P, 755, CS, CE, CD, CV, CX
4MB $55.98 42715 8MB $87.52 42716
16MB $154.12 42717
ThinkPad 750, 750C series, P
8MB $156.80 35181 16MB $159.82 35182
32MB $287.09 43310
ThinkPad 760, E, ED, EL, ELD, XD, XL, 380, 380D, 385D
8MB $68.12 69680 16MB $128.08 69704
32MB $284.49 71913

NEC

Versa 6000, 6030 series, 6050 series
8MB $85.84 71586 16MB $149.44 71583
32MB $274.04 71584
Versa 2000 series
8MB $65.19 44184 16MB $127.39 44186
Versa 2400, CD, 2405, CD, 2430CD, 2435CD
8MB $65.51 76394 16MB $127.80 76396
Versa 2600
8MB $93.08 85753 16MB $158.14 85754
32MB $269.74 85755 64MB $619.55 85756
Versa 4000 series, E, V, M, P
4MB $81.26 30555 8MB $87.52 30557
12MB $134.02 43231 16MB $146.09 31342
20MB $199.21 43040 32MB $269.74 43041
Versa 6200MX, NT
16MB $139.48 85186 32MB $274.04 85192

Texas Instruments

Extensa 450 series, 550 series, 560 series, 570 series
8MB $69.16 59865 16MB $125.35 59866
Extensa 510, 515
8MB $75.62 72130 16MB $136.70 72134
32MB $259.99 72136
TravelMate 5000 series, 5300
8MB $118.63 68609 16MB $169.82 68608
8MB piggyback module $82.43 68610

TOSHIBA

Dynapad T200, T200CS
8MB $78.34 31508 16MB $146.09 33132
Equium 5160D, 5200D, 6200D
8MB $65.06 87226 16MB $119.64 87227
Infinia 7130, 7160, 7200
8MB $86.19 76190 16MB $119.58 76191
Portege 650, 660, CDT, Tecra 500, 510 series, 730 series and 740 series
8MB $65.19 72535 16MB $129.12 72534
Portege 610, Tecra 710,720, 730 series, Satellite Pro 200, 420, 430 series
8MB $89.92 67892 16MB $148.76 67893
32MB $275.35 67894
Satellite 100, 105, Satellite Pro 400, 410 series
8MB $88.56 63086 16MB $148.76 63087
32MB $279.56 61117
Satellite 110, 115, 200CDS, Satellite Pro 430CDT, 430CDS
8MB $89.92 67892 16MB $148.76 67893
32MB $275.35 67894
T2100, T2150
4MB $53.99 52810 8MB $72.89 52811
16MB $134.02 52812 24MB $199.64 52813
Tecra 510CDT, 510CDS
8MB $65.19 72535 16MB $129.12 72534
32MB $289.70 74695

WORLDWIDE WEB http://www.simpletech.com

FAX ON-DEMAND 1-800-429-5626 x500

If you don't see it, call! CDW® carries Simple Technology's complete line of 1500 memory upgrade products for portables, workstations, servers, printers, desktop systems, PDAs and more. Memory pricing subject to change–please call your CDW account manager for the latest pricing and availability information.

Simple® TECHNOLOGY

Every Simple Technology product is tested for 100% compatibility and is backed with a lifetime warranty.

LIFETIME WARRANTY

INDIVIDUALLY TESTED 100% COMPATIBLE

Each Simple Technology removable hard drive is pre-formatted with Ontrack Disk Manager (software included). Data transfer rate: 16.6Mbps. Guaranteed for one full year.

Model	Hard drive capacity 1.44GB	2.1GB	3.08GB
IBM ThinkPad 355, 360, 750, 755	$369.79 87497	$549.14 71582	$715.63 88867
IBM ThinkPad 760, C, CD, L, LD	$369.79 87498	$549.14 85087	—
Toshiba T4700, T4800, T4850	$369.79 87501	—	—
Toshiba T700, T710, T720	$400.00 87502	$548.48 71588	$715.63 89072
NCR Safari 3181 4/50, 3182 4/75	$369.79 87499	$549.14 71587	$715.63 88869
AT&T Globalyst 250	$369.79 87500	$549.14 71587	$715.63 88869
NEC Versa 2000, 4000	$369.79 87500	$549.58 82845	—
NEC UltraLite, Versa E, V, M, P	$369.79 87499	$549.14 71587	$715.63 88869
Compaq LTE 5000, 5100, 5200, 5300, 5400	$369.79 87496	$549.64 71576	$715.63 88865

Digital "Film" for Your Digital Camera

ATA Flash PC Cards

4MB ATA Memory	$94.02	66564
8MB ATA Memory	$119.26	66560
12MB ATA Memory	$179.93	66561
16MB ATA Memory	$229.74	66563
32MB ATA Memory	$454.99	73712

Up to 40MB available

Compatible with Casio Cassiopeia-HPC, Canon Powershot 600, Kodak DC50, Ricoh RDC-2, NEC MobilePro

CompactFLASH

4MB Memory	$79.03	72849
8MB Memory	$128.58	81022
Flash card adapter	$26.08	72851
Flash card adapter with 4MB	$109.54	89653
Flash card adapter with 8MB	$146.09	89654

Compatible with Canon Powershot 350, Kodak DC25, DC120

97% of credit-approved orders placed by 9pm ship same day!

800-865-4239

www.cdw.com/pwl

Circle 46 on reader service card

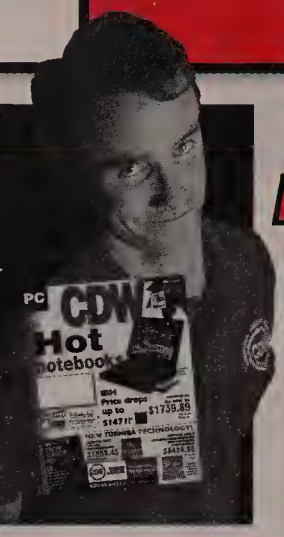
©1997 CDW® Computer Centers, Inc. PCW3205C 10 97 200 N. Milwaukee Avenue, Vernon Hills, IL 60061

COMPUTER DISCOUNT WAREHOUSE™

The right price.
The right advice.

We offer you

"Get more than just a great price. Call today and get a little empathy, some free advice and a free CDW catalog."



ViewSonic® G773

17" color monitor

■ 17" SuperClear™ with Microfilter™ flat square screen CRT, 16" viewable image size ■ 0.26mm dot pitch ■ Maximum resolution: 1280 x 1024, 1024 x 768 at 87Hz

Call! CDW 91078

P775 ..... **Call!** CDW 91079
■ 17" Super Contrast flat square screen CRT, 16" viewable image size ■ 0.25mm dot pitch ■ Maximum resolution: 1600 x 1280; 1280 x 1024 at 88Hz

macromedia

Director 6 Multimedia Studio

For Windows 95 and NT

Powerful tools for multimedia and the web

Director 6 Multimedia Studio gives you the most advanced web authoring and playback capabilities available. Create Internet and hybrid CD+Internet applications with new drag-and-drop behaviors and live web authoring. With streaming Shockwave, there's no waiting for the entire file to download—even over small bandwidth connections!

Upgrade ..... **$478.48** CDW 84234

Full version ..... **$929.20** CDW 84233

Hardware, Software & Peripherals at *DISCOUNT* Prices!

NETWORKING PRODUCTS

Microsoft

Windows NT Server V4.0
Upg + 5-client license CD 359.43
Upg + 10-client license CD 479.72
Comp upg + 5-client license CD 359.43
Comp upg + 10-client license CD 479.72
Server + 5-client license CD 725.47
Server + 10-client license CD 999.96
Single-client license upg 15.48
Single-client license 29.88
Windows NT Workstation V4.0
Version upg CD 129.52
Single-client upg 229.39
Full version CD 269.94

Novell

IntranetWare
5-user CD 654.39
10-user CD 1316.20
25-user CD 2309.55
50-user CD 3119.90
Call for Novell IntranetWare upgrades.
IntranetWare for Small Business
1-user additional license 46.64
5-user additional license 216.83
Server with 5 licenses 594.80
Call for additional Novell IntranetWare multi-user configurations.

3Com

Impact IQ ISDN modem external 309.56
3C509B-TPO EtherLink III 10BT ISA 58.58
3C509B-COMBO EtherLink III combo ISA 119.89
3C509B-TPC EtherLink III coax ISA 71.92
3C905-TX Fast EtherLink XL 10/100 PCI 84.31
3C900-TPO EtherLink XL 10BT PCI 99.44
3C900-COMBO Ethernet XL PCI combo 119.99
OfficeConnect 4-port hub 68.46
OfficeConnect 8-port hub 119.76
SuperStack II Hub 7568112-port 10BT 499.48
SuperStack II Hub 24-port 10BT 859.44

HOT BUY

MAG INNOVISION
710V²
17" color monitor
$459.70* CDW 79031

Allied Telesyn International

AT-2000T Plus 16-bit ISA bus adapter card 21.66
AUI/10BT slimline micro transceiver 24.13

BELKIN

OmniView PS/2 2-port 167.54
OmniView PS/2 4-port 228.56

Cisco Systems

FastHub 104T 4-port 100BTX hub 469.42
FastHub 108T 8-port 100BTX hub 769.41
FastHub 216T 100BTX Fast Ethernet hub 1829.65

IBM

IBM PC Server 310
5/200 32MB no hdd 8X CD 2085.46
5/200 32MB 2.1GB 8X CD 2449.13
IBM PC Server 315
6/200 32MB no hdd 8X CD 2399.63
6/200 32MB 2.1GB 8X CD 2799.96
IBM PC Server 330
6/200 32MB ECC optional hdd 8X CD 3718.25
6/200 32MB ECC optional hdd 8X CD 4219.91
6/200 32MB ECC 2x2.25GB 8X CD 7625.74

intel

EtherExpress PRO 100 PCI 81.46
EtherExpress PRO/10+ PCI combo 118.60
Express 10/100 Fast Ethernet switch 1978.65
Express 10/100 Stackable 12-port hub 999.00

NETWORKING PRODUCTS

LINKSYS

StackPro 100 8-port 100BTX hub 454.61
StackPro 100 10-port 100BTX hub 516.25
Combo Ether16 LAN card 35.53
Combo EtherPCI LAN card 49.26
Combo PC/Ethernet card 10BT 91.93
EtherFast 2-port 10/100 switch 385.60
10BT 5-port workgroup hub 49.53

HOT BUY

HEWLETT® PACKARD
HP LaserJet 6MP printer
$859.55* CDW 74908

Netscape

Netscape Communicator Std Edition 45.99
Netscape Communicator Professional Edition 59.29

Seagate Software

Backup Exec V6.11 for Windows NT
Single server edition 414.90
Enterprise edition 817.06
Desktop Management Suite V2.7
50-user 1285.96
100-user 2179.35

DATA STORAGE

iomega

Zip drive 100MB parallel 149.95
Zip drive 100MB external SCSI 149.95
Zip drive 100MB internal SCSI 149.95
Ditto Easy 800MB Travan internal 99.95
Jaz drive 1GB internal SCSI-2 ..... 299.95
Jaz drive 1GB external SCSI-2 ..... 399.95
Ditto drive 2GB internal 149.95
Ditto drive 2GB external 199.95
Ditto Dash Card 59.95

HEWLETT® PACKARD

HP Colorado T3000 3.2GB TBU 189.84
HP Colorado T4000s Travan internal 377.87
HP Colorado T4000s Travan external 459.11

Quantum

Fireball ST 1.6GB Ultra ATA 189.15
Fireball ST 2.1GB Ultra ATA 206.24
Fireball ST 3.2GB Ultra ATA 245.17
Fireball ST 4.3GB Ultra ATA 296.13
Fireball ST 6.5GB Ultra ATA 406.29

Seagate

1.2GB Fast ATA-2 ..... 174.44
2.1GB Fast ATA-2 ..... 188.23
2.1GB Ultra SCSI 519.21
2.5GB Fast ATA-2 ..... 227.53
4.5GB Ultra SCSI 869.36
9.1GB Ultra SCSI 1259.43

INPUT DEVICES

Connectix Color QuickCam V2.0 ..... 209.57
Epson PhotoPC digital camera 334.92
Epson PhotoPC 500 digital camera 499.00
Epson ActionScanning System II 269.42
Epson Expression 636 Exec scanner 799.00
Hewlett Packard ScanJet 5s 239.57
Hewlett Packard ScanJet 5p 378.68
Hewlett Packard ScanJet 4cse 679.55
Kensington Mouse-in-a Box 25.76
Kensington Expert Mouse V5.0 PS/2 ..... 91.77
Kensington Orbit 49.04
Kodak DC50 Zoom Digital Camera 699.00
Kodak DC120 Zoom Digital Camera 999.00
Microtek Color PageWiz compact scanner 149.39
Microtek ScanMaker E3 color flatbed 174.56
Microtek ScanMaker E6 std color flatbed 329.73
Microtek ScanMaker V300 color flatbed 139.41
UMAX Astra 600P scanner 199.81
UMAX Astra 600S scanner 235.65

INPUT DEVICES

UMAX Astra 1200S scanner w/PhotoDeluxe 438.58
Visioneer PaperPort mx scanner 163.89
Visioneer PaperPort ix scanner 179.37
Visioneer PaperPort Strobe scanner 299.00

MONITORS

MAG Innovision 410V2 14" 0.28mm 209.18
MAG Innovision 510V2 15" 0.28mm 289.78
MAG Innovision 710V2 17" 0.28mm 459.70
Magnavox MB4010 14" 0.28mm 219.41
Magnavox MV5011 15" 0.28mm 277.56
Magnavox MB7000 17" 0.28mm 509.69
NEC MultiSync E500 15" 0.25mm 375.29
NEC MultiSync E700 17" 0.25mm 664.04
NEC P750 17" 0.25mm 858.26
NEC P1150 21" 0.28mm 1497.13
Princeton E050 15" 0.28mm 289.76
Princeton E070 17" 0.28mm 469.36
Princeton E090 19" 0.26mm 859.39
Samsung SyncMaster 500s 15" 0.28mm 289.00
Samsung SyncMaster 700s 17" 0.28mm 519.00
Sony Multiscan 100sx 15" PnP 0.25mm 329.17
Sony Multiscan 100sf 15" PnP 0.25mm 369.61
Sony Multiscan 200sf 17" PnP 0.25mm 775.83
Sony Multiscan 300sf 20" PnP 0.30mm 1395.25
ViewSonic E641 14" 0.28mm 209.35
ViewSonic E655 15" 0.28mm 294.93
ViewSonic G771 17" 0.27mm 578.35
ViewSonic P815 21" 0.25mm 1539.04

PC CARDS

3Com LAN PC Card combo 177.48
3Com 33.6 10BT LAN+modem 306.72
3Com 33.6 10BT LAN+modem combo 339.08
3Com 32-bit Fast EtherLink XL CardBus 147.57
Hayes ACCURA 33.6 10BT Ethernet 294.18
Hayes ACCURA 56K 199.65
Hayes OPTIMA 56K 207.04
Intel EtherExpress PRO/100 16-bit PC Card adapter 159.95
Intel EtherExpress PRO/100 32-bit Card Bus adapter 188.74
Motorola Montana 33.6 ..... 185.66
Motorola Mariner 33.6 ..... 349.54
New Media PC Card joystick adapter 57.51
Practical Peripherals 33.6 ..... 156.42
Practical Peripherals 56K Flex cellular 179.37
Simple 33.6 cellular 146.59
Simple 33.6 Communicator w/SimpleJack 149.20
Simple 56K Communicator 169.04
U.S. Robotics Ethernet adapter w/XJACK 109.00

HOT BUY

VISIONEER
PaperPort mx scanner
$163.89* CDW 81218

U.S. Robotics 33.6 cellular 239.00
U.S. Robotics 33.6 cellular w/XJACK 229.95
U.S. Robotics 33.6 w/XJACK 219.00
U.S. Robotics 56K w/XJACK 229.95
Xircom 33.6 ..... 189.55
Xircom 33.6 Ethernet 10BT 279.20
Xircom 33.6 Ethernet combo 316.91

MODEMS

Global Village

TelePort 56K x2 faxmodem internal 156.41
TelePort 56K x2 faxmodem external 164.95

Hayes

ACCURA 33.6K faxmodem internal 97.60
ACCURA 33.6K faxmodem external 125.59
ACCURA 56K Internal 147.01

MODEMS

Hayes

ACCURA 56K external 169.97
ACCURA 56K speakerphone internal 179.40
ACCURA 56K speakerphone external 169.36
OPTIMA 56K internal 269.41
OPTIMA 56K external 289.06
ACCURA ISDN 249.45

HOT BUY

3Com
FastEtherLinkXL 10/100 PCI
$84.31* CDW 71029

Practical Peripherals

56K data/fax modem internal 139.95
56K data/fax modem external 179.34

U.S. Robotics

Sportster Series
Winmodem V.34 33.6 internal w/fax 76.24
V.34 33.6 internal w/fax 114.38
V.34 33.6 external w/fax 139.38
Voice V.34 33.6 internal w/fax 139.07
Voice V.34 33.6 external w/fax 159.90
56K x2 internal 197.99
56K x2 external 217.99
56K x2 Voice internal 217.99
56K x2 Voice external 237.99
ISDN 128K terminal adapter 229.66
Courier Series
V.34 33.6 internal w/fax 219.96
V.34 33.6 external w/fax 239.57
56K x2 internal 235.35
56K x2 external 268.17
I-modem ISDN V.34 faxmodem internal 244.84
I-modem ISDN V.34 faxmodem external 286.02
DataBurst ISDN U interface external 205.49
DataBurst ISDN S/T interface external 239.28

ZOOM

V.34I Plus 33.6 faxmodem internal 81.46
V.34X Plus 33.6 faxmodem external 99.30
56K internal 147.01
56K external 166.12

PRINTERS

EPSON®

Stylus Color 400 ..... 199.00
Stylus Color 600 ..... 299.00
Stylus Color 800 ..... 449.00
Stylus Color 1520 ..... 799.00
Stylus Color 3000 ..... 1999.00
Stylus Photo 499.00

HEWLETT® PACKARD

HP DeskJet 340 portable inkjet printer 269.37
HP DeskJet 672C color printer 199.00
HP DeskJet 694C color printer 299.00
HP DeskJet 820Cse color printer 249.00
HP DeskJet 1000Cse color printer 499.00
HP LaserJet 5 printer 1038.13
HP LaserJet 6Lse printer 399.00
HP LaserJet 6MP printer 859.55
HP LaserJet 6Pse printer 799.00

LEXMARK

Color Jetprinter 2050 ..... 199.26
Color Jetprinter 3000 ..... 239.95
Color Jetprinter 7000 ..... 399.74
Optra E+ 379.49
Optra S 1250 ..... 1089.38
Optra S 1650 ..... 1255.23
Optra S 2450 ..... 2175.09
Optra SC 1275 ..... 3929.19

** Offer valid through 10/31/97 or while supplies last.*

800-865-4239

www.cdw.com/pwl

Visit CDW® on the Internet to sign up for Buyer's Edge for unadvertised specials!

©1997 CDW® Computer Centers, Inc.
200 N. Milwaukee Avenue, Vernon Hills, IL 60061 PCW3205D 10/97

a rare sales tool.
it's called objectivity.

SYMANTEC.

pcANYWHERE 32 V8.0

For Windows 95 and NT

Symantec pcANYWHERE32 V8.0 gives you optimal 32-bit support for both Windows 95 and Windows NT. It also includes versions of pcANYWHERE for Windows V3.1 and DOS so you can run pcANYWHERE on all the platforms you use. pcANYWHERE supports the latest, fastest hardware to optimize your connection time.

Host only	$78.83	CDW 93320
Remote only	$89.87	CDW 93322
Host and remote ....$70 rebate!	$64.81*	CDW 93317

*After $70 mail-in manufacturer rebate. Restrictions apply.

Office 97 Professional Edition

Microsoft

More than 10 million copies of Office 97 applications sold!

Office 97 Professional Edition upgrade with Bookshelf Basics	$266.79**	CDW 78404
Office 97 Professional Edition with Bookshelf Basics	$494.39*	CDW 78403
Office 97 Professional Edition upgrade with Bookshelf Basics and Intellimouse	$287.11**	CDW 78405
Standard Edition upgrade	$179.71**	CDW 78407
Standard Edition	$404.36*	CDW 78406
Small Business Edition competitive upgrade	$179.86**	CDW 82848
Small Business Edition	$411.64*	CDW 82847

*Receive a $35 CDW rebate with purchase of Office 97. Call for details. Offer valid through 9/30/97. **After $40 mail-in manufacturer upgrade rebate. Restrictions apply. Offer valid while supplies last.

SAMSUNG ELECTRONICS

Shown with optional multimedia/Internet upgrade kit

SyncMaster 700s

17" color monitor

- 17" diagonal flat square tube, 15.7" viewable image size
- 0.28mm dot pitch
- Maximum resolution: 1280 x 1024 at 60Hz
- Invar shadow mask
- 3-year warranty with advance replacement

$519.00 CDW 85571

700b ..... **$579.31** CDW 85573

CDW® carries more than 20,000 products! If you don't see it, Call!

COMPUTERS

TOSHIBA

Libretto mini-notebooks
50CT 5/75 16MB 772MB 6.1" active 1929.45
Satellite & Satellite Pro notebooks
220CDS 5/133 16MB 1.34GB 12.1 dual 10X CD. . 1899.13
440CDX 5/133 MMX 16MB 1.34GB
12.1" dual 10X CD. 2359.54
440CDT 5/133 MMX 16MB 1.34GB
12.1" active 10X CD 2799.55
460CDT 5/166 MMX 32MB 2.02GB
12.1" active 10X CD 3659.16
Portege notebooks
300CT 5/133 MMX 32MB 1.5GB 10.4" active . . 3369.46
660CDT 5/150 16MB 1.2GB
11.3" active 10X CD 3899.63
Tecra notebooks
510CDT 5/133 16MB 2.1GB
12.1" active 10X CD 2699.76
520CDT 5/166 MMX 32MB 2GB
12.1" active 10X CD 4159.45
530CDT 5/166 MMX 32MB 2GB
12.1" active 10X CD 4579.17
730XCDT 5/150 MMX 16MB 2GB
12.1" active 10X CD 3499.77
740CDT 5/166 MMX 16MB 3GB
13.3" active 10X CD 4659.23
740CDT 5/166 MMX 16MB 3GB
13.3" active 10X CD 4849.62
Infinia mini-towers
7161 5/166 MMX 32MB 2.38GB 12X CD ... 1649.89
7201 5/200 MMX 32MB 3GB 12X CD... 1989.24
Equium desktops
5160D 5/166 MMX 32MB 2.1GB 12X CD. . . 1418.82
5200D 5/200 MMX 32MB 2.38GB 12X CD . . 1549.64
6200D 6/200 32MB 3GB 12X CD 2118.60
Equium mini-towers
6200M 6/200 32MB 4.3GB 12X CD 2479.47
6260M 266MHz Pentium II 32MB
3.7GB 16X CD. 2569.07

Acer / Texas Instruments

Extensa notebooks
610CD 5/150 16MB 1.4GB
11.3" dual 10X CD. 1964.67
610CDT 5/150 16MB 1.4GB
11.3" active 10X CD 2549.84
660CD 5/166 MMX 16MB 1.35GB
12.1" dual 10X CD. 2699.55
660CDT 5/166 MMX 16MB 2.1GB
11.3" active 10X CD 3179.04
TravelMate notebooks
TM7060 5/166 MMX 32MB 2GB
12.1" active 10X CD 4289.59
TM7063NT 5/166 MMX 32MB 3GB
12.1" active 10X CD 4949.69

AST

Ascentia notebooks
A60+ 5/150 16MB 1.44GB 12.1" active 10X CD . . 2658.65
A70+ 5/150 MMX 16MB 1.44GB
12.1" active 10X CD 3075.78
P70 5/150 MMX 32MB 2.1GB
12.1" active 10X CD 3559.65
P80 5/166 MMX 32MB 3GB
12.1" active 10X CD 3997.62
Bravo LC 6233 Series desktops
233MHz Pentium II 32MB 2GB Win95 . . 2099.23
233MHz Pentium II 32MB 2GB WinNT . . 2197.23
Bravo MS Series desktops
5/166 16MB 2GB. 1245.78
5/166 32MB 2GB 16X CD 1487.26
5/166 32MB 3GB 16X CD 1575.06
5/166 MMX 32MB 2GB 16X CD 1514.69
5/166 MMX 32MB 2GB 16X CD 1609.48

COMPUTERS

AST

Bravo MS Series desktops
5/200 32MB 2GB 16X 1549.10
5/200 32MB 3GB 16X CD 1487.26
5/200 MMX 32MB 3GB 16X CD 1696.69
5/200 MMX 32MB 3GB 16X CD 1799.25
Bravo MS-T Series mini-towers
5/166 32MB 3GB 16X CD 1575.06
5/200 32MB 3GB 16X CD 1564.09
5/200 32MB 3GB 16X CD 1649.08
5/200 MMX 32MB 3GB 16X CD 1769.37
5/200 MMX 32MB 3GB 16X CD 1879.98
6/200 32MB 2.5GB 8X CD 1886.33

COMPAQ

Armada notebooks
1520DM 5/133 16MB 1GB 11.3 dual 10X CD . . 1989.47
1530DM 5/133 MMX 16MB 1.4GB
12.1" dual 10X CD. 2499.00
1550DMT 5/133 16MB 1.4GB
12.1" active 10X CD 2999.00
1580DMT 5/150 MMX 16MB 2.1GB
12.1" active 10X CD 3499.00
4130T 5/133 16MB 1.08GB 11.8" active . . 2497.23
4131T 5/133 16MB 1.4GB 12.1" active ... 2849.00
4150 5/150 MMX 16MB 1.6GB 12.1" dual. . . 2999.00
4160T 5/166 MMX 16MB 2GB 12.1" active. . . 3999.00
7710MT 5/150 MMX 16MB 1.6GB
12.1" active 4399.00
7730MT 5/166 MMX 32MB 2.1GB
12.1" active 4999.00
7750MT 5/166 MMX 32MB 2.1GB
12.1" active 5799.00
Deskpro 2000 desktops
5133/1200 5/133 16MB 1.2GB 979.00
5133/2500 5/133 16MB 2.5GB 1089.00
5166X/2100 5/166 MMX 16MB 2.1GB . . 1199.00
5166X/3200 5/166 MMX 16MB 3.2GB . . 1309.00
5200X/2100 5/200 MMX 16MB 2.1GB . . 1389.00
5200X/3200 5/200 MMX 32MB 3.2GB . . 1579.00
5233X/3200/CDS 5/233 MMX 32MB
3.2GB 16X CD. 1949.00
Deskpro 2000 mini-towers
5166X/3200 5/166 MMX 16MB 3.2GB
16X CD 1619.00
5200X/3200/CDS 5/200 MMX 32MB
3.2GB 16X CD. 1769.00
6200/2500/CD 6/200 32MB 2.5GB 8X CD . . 2109.00
Deskpro 4000 desktops
5166X/2400 5/166 MMX 16MB 2.4GB . . 1389.00
5166X/3200 5/166 MMX 32MB 3.2GB . . 1599.00
6233X/2500/CDS 233MHz Pentium II 32MB
2.5GB 8X CD. 2319.00
5200X/2400 5/200 MMX 32MB 2.4GB . . 1689.00
5200X/3200 5/200 MMX 32MB 3.2GB . . 1759.00
Deskpro 4000 mini-towers
5166X/3200/CDS 5/166 MMX 32MB
3.2GB 16X CD. 1799.00
Deskpro 6000 desktops
6200/4200/CDS 6/200 32MB 4.2GB ... 2789.00
6233X/2150/PDS 233MHz Pentium II
32MB 2.15GB 2629.00
6266X/4200/CDS 266MHz Pentium II
32MB 4.2GB 8X CD 3179.00
Deskpro 6000 mini-towers
5166X/2150/PDS 5/166 MMX 32MB
2.15GB 1849.00
5200X/4200/PDS 5/200 MMX 32MB
4.2GB 2579.00
6200/4200/PDS 6/200 64MB 4.2GB 3099.00
Presario desktops
2120 5/150 24MB 2GB 8X CD 999.00
2200 5/180 16MB 1.6GB 8X CD. 799.00
Presario mini-towers
4504 5/200 16MB 2.1GB 16X CD 999.00
4814 5/233 MMX 32MB 6.5GB 24X CD . 2299.00
4824 5/233 MMX 32MB 6.5GB 24X CD
Iomega Zip drive 2699.00

COMPUTERS

HEWLETT PACKARD

HP OmniBook 800 Series notebooks
800CT 5/166 MMX 16MB 2GB
10.4" active 3659.96
HP OmniBook 5700 Series notebooks
5/150 MMX 16MB 1.86GB 12.1" active. . 3577.28
5/166 MMX 16MB 1.86GB 12.1" active. . 4019.79
5/166 MMX 16MB 1.86GB 12.1" active. . 4075.77
5/166 MMX 32MB 2.79GB 12.1" active. . 4548.28
HP Vectra VL Series 5 PC desktops
5/166 16MB 1.6GB 1166.30
5/166 MMX 16MB 2.5GB 8X CD. 1377.09
5/200 MMX 32MB 2.5GB 8X CD. 1598.63
5/233 MMX 16MB 2.5GB 1598.12
HP Vectra VL Series 5 PC mini-towers
5/133 16MB 1.6GB 1219.44
5/166 16MB 2.5GB 1229.50
5/166 MMX 16MB 2.5GB 8X CD. 1439.22
5/233 MMX 32MB 4GB 1889.76
HP Vectra VE Series 3 PC desktops
5/133 16MB 1GB. 1028.19
5/133 16MB 1.6GB 999.36
5/166 16MB 1.6GB 1038.97
5/200 16MB 1.6GB 1048.60
HP Vectra 500Series desktops
525CD 5/133 16MB 1.2GB 8X CD 999.49
520MCx 5/166 16MB 1.6GB 16X CD ... 1327.64
HP Vectra 500 Series mini-towers
525CD 5/166 16MB 1.6GB 16X CD 1234.78
525MCx 5/166 MMX 24MB 2.5GB 16X CD . . 1549.65
525CD 5/200 MMX 24MB 2.5GB 16X CD . . 1588.65
525MCx 5/200 MMX 32MB 2.5GB 16X CD . . 1936.70
HP NetServer E40 Series towers
6/180 16MB no hdd 8X CD 10/100 Ethernet. 2054.28
6/180 16MB 2.1GB 8X CD 10/100 Ethernet . . 2314.03
6/200 32MB 2.1GB 8X CD 10/100 Ethernet . . 2689.39

IBM

ThinkPad notebooks
380 5/150 16MB 1.08GB 12.1" dual 1699.46
380D 5/150 16MB 1.35GB 12.1" dual 8X CD. . . 1999.50
380D 5/150 MMX 16MB 2.1GB
12.1" active 8X CD 3287.43
560 5/133 8MB 2.1GB 11.3" dual 1899.56
560 5/133 8MB 2.1GB 12.1" active 3789.45
560E 5/150 MMX 16MB 2.1GB 11.3" dual . . 2599.86
560E 5/166 MMX 16MB 2.1GB
12.1" active 4186.26
760ED 5/133 16MB 2.1GB
12.1" active 6X CD 3739.72
760E 5/150 16MB 2.1GB 12.1" active... 3578.40
760XL 5/166 MMX 16MB 2.1GB 12.1" active . . 3869.88
760XL 5/166 MMX 32MB 2.1GB
12.1" active 4064.04
760XD 5/166 MMX 32MB 3GB
12.1" active 8X CD 4679.37
765L 5/166 MMX 32MB 3GB 13.3" active. . . 5999.71
765D 5/166 MMX 32MB 3GB
13.3" active 8X CD 6659.22
Aptiva Series mini-towers
C3E 5/233 MMX 32MB 4.2GB 16X CD. . 1939.05
C3D 5/233 MMX 32MB 4.2GB 8X CD. . . 2699.00
S9C 5/200 MMX 32MB 4.2GB 16X CD. . 1939.05
S3C 5/233 MMX 32MB 4.2GB 16X CD. . 2299.00
S35 5/233 MMX 48MB 6.4GB 24X CD . . 2699.00
PC300GL Series desktops
5/166 16MB 1.2GB 999.63
5/166 16MB 2.5GB 1109.18
5/166 16MB 2.5GB 16X CD 1366.50
5/166 MMX 32MB 2.5GB 1419.28
PC300XL Series desktops
233MHz Pentium II 32MB 2.5GB 16X CD. . . 2296.14
233MHz Pentium II 32MB 2.5GB 1999.36
266MHz Pentium II 32MB 4.2GB 16X CD . . 2659.12
266MHz Pentium II 32MB 4.3GB 16X CD. . . 2969.24

COMPUTERS

FUJITSU

LifeBook 500 Series notebooks
555Tx 5/150 MMX 16MB 2GB
12.1" active 10X CD 3499.00
565Tx 5/166 MMX 32MB 2GB
12.1" active 20X CD 4299.00
LifeBook 600 Series notebooks
635T 5/133 16MB 1.3GB 12.1" active . . 2799.00
655Tx 5/150 MMX 16MB 1.3GB 12.1" active. . . 3799.00

HITACHI

VisionBook Plus Series notebooks
4140 5/133 16MB 1.4GB 12.1" dual 10X CD 1799.00
4150x 5/150 MMX 16MB 1.4GB
12.1" dual 10X CD. 2499.00
4360x 5/166 MMX 16MB 1.4GB
12.1" active 10X CD 3499.00
VisionBook Pro Series notebooks
7340 5/133 MMX 16MB 1.4GB
12.1" active 10X 3199.00
7360 5/150 MMX 16MB 2.1GB
12.1" active 10X CD 4499.00
7560 5/166 MMX 16MB 3GB
13.3" active 10X CD 4999.00
VisionBook Elite Series notebooks
8560 5/166 MMX 16MB 2.1GB
13.3" active 10X CD 4799.00

SAMSUNG ELECTRONICS

Sens Pro Series notebooks
521 5/133 16MB 1.44GB 12.1" active 10X CD . . 2699.00
523 5/133 32MB 2.1GB 12.1" active 10X CD. . . 3199.00
525 5/150 MMX 48MB 2.1GB
12.1" active 10X CD 3799.00

HANDHELD PCs

Casio Cassiopeia A-11 4MB 484.13
Hewlett-Packard 300LX Palmtop PC 4MB . . 459.07
Hewlett-Packard 320LX Palmtop PC 4MB . . 647.27
Philips Velo 1 4MB 739.99
U.S. Robotics PalmPilot Personal. 286.98
U.S. Robotics PalmPilot Professional 377.99

CDW® TELEPHONE HOURS

Sales
Monday-Friday 7 a.m.-9 p.m. CT• Saturday 9 a.m.-5 p.m. CT
Tech Support for Customers
Monday-Friday 9 a.m.-9 p.m. CT• Saturday 9 a.m.-5 p.m. CT

BUY WITH CONFIDENCE
CDW® IS A NASDAQ TRADED COMPANY
TICKER SYMBOL CDWC D & B rated 5A1 Duns 10-762-7952

Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed $4.00 for single package shipments or $6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes, errors in advertisements or other extenuating circumstances. All trademarks and registered trademarks are the sole property of their respective owners.

COMPUTER DISCOUNT WAREHOUSE™

CDW® offers toll-free technical support!

800-865-4239

www.cdw.com/pwl

©1997 CDW® Computer Centers, Inc

Circle 65 on reader service card PCW3205E 10/97 200 N. Milwaukee Avenue, Vernon Hills, IL 60061

WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE. CALL FOR LATEST PRICING!!

WE ACCEPT PO'S FROM QUALIFIED FIRMS

30 DAY* MONEY BACK GUARANTEE

M E M O R Y

LIFETIME WARRANTY

SECURITY WILL CALL WINDOW NOW OPEN! NO SURCHARGE FOR MC, VISA AE & DISCOVER

HOT BOX SPECIALS

HP 4, 4P, 5P, 6P, 5MP – 2Meg	14.00
Panasonic Laser 6500 – 2Meg	14.00
HP Deskjet 1200C, LP – 2Meg	14.00
Lexmark Optra – 2Meg	14.00
1 x 9-80	9.00
1 x 9-70	12.00
1 x 3-70	6.00
1 x 9-60	12.00
Compaq Concerto – 8Meg	39.00
TI 5000, 5100, 5200 Base – 8Meg	29.00

Check our website for additional items not listed in our ad and order through our secure order form! www.4LATrade.com

72 PIN SIMMS (FPM, EDO)

	60NS	70NS	80NS
256 x 36	14.00	–	
512 x 38	19.09	–	
256 x 32	9.00	–	
512 x 32	19.99	–	
1 x 36 4 mg	32.00	32.09	32.00
2 x 36 8 mg	57.99	57.00	57.00
4 x 36 16 mg	79.99	79.00	79.00
8 x 36 32 mg	159.09	159.00	159.00
16 x 36 64 mg	449.99	449.00	449.00
1 x 32 4 mg	22.99	22.00	22.00
2 x 32 8 mg	42.90	42.00	42.00
4 x 32 16 mg	69.99	69.00	69.00
8 x 32 32 mg	139.00	139.80	139.00
16 x 32 64 mg	419.00	419.00	419.00
1 x 32 4 mg EDO	22.00	22.09	22.00
2 x 32 8 mg EDD	42.00	42.09	42.00
4 x 32 16 mg EDD	68.00	68.00	68.00
8 x 32 32 mg EDD	139.00	139.00	139.00
16x32 64 mg EDD	419.00	419.00	419.00

ECC SIMMS

Pentium Pro 72 Pin (Install in pairs) / SIMMS

8Meg	59.00	64Meg	549.00
16Meg	109.00	128Meg	1089.00
32Meg	219.00		

SIMM MODULES
(Add $5.00 for SIPP)

	60NS	70NS	80NS
1Meg x 3 (3 chip)	11.00	11.00	11.00
1Meg x 9 (9 chip)	17.00	17.00	17.00
4Meg x 3 (3 chip)	24.00	24.00	24.00
4Meg x 0 (9 chip)	29.00	29.00	29.00
16Meg x 9 (9 chip)	119.00	119.00	119.00

DIMMS (168 pin)

INDUSTRY STANDARD DIMMS					
Unbuffered	16Mg	32Mg	64Mg	128Mg	256Mg
3.3V ECC, EDD	119	219	425/499	989	—
3.3V EDO	99	175	344	—	—
6.0V EDD	99	175	344	1231	—
5.0V FPM	119	219	425/499	989	—
Buffered					
3.3V ECC, EDO	119	224	425/499	989	2425
3.3V ECC, FPM	119	224	425/543	1025	2425
5.0V ECC, FPM	119	224	462	999	—

SDRAM – INDUSTRY STANDARD, DELL & GATEWAY		
3.3V SDRAM (2 clock)	8Meg	50.00
3.3V SDRAM	16Meg	94.00
3.3V SDRAM	32Meg	179.00
3.3V SDRAM	64Meg	429.00
3.3V SDRAM	128Meg	950.00
3.3V SDRAM	256Meg	1925.00
APPLE		
1 x 64	8Meg	50.00
2 x 64	16Meg	89.00
4 x 64	32Meg	169.00
8 x 64	64Meg	312.00
16 x 64	128Meg	975.00
DELL, OPTIPLEX, GXPRO 200		
3.3V ECC, EDD	16Meg	119.00
3.3V ECC, EDD	32Meg	249.00
3.3V ECC, EDD, 8/32chip	64Meg	479/845
3.3V ECC, EDD	128Meg	1690.00
DELL POWER EDGE 2100/4100		
3.3V ECC, EDD	16Meg	119.00
3.3V	32Meg	249.00
3.3V, 8/32 chip	64Meg	479/845
3.3V	128Meg	1690.00
3.3V	256Meg	3627.00
MOTOROLA (Apple Compatible)		
3.3V EDO	8Meg	49.00
3.3V EDO	16Meg	99.00
3.3V EDO	32Meg	175.00
3.3V EDD	64Meg	344.00

CACHE MEMORY

- 512K (IBM Part # 92G7336) – $59.00 works with PC700, PC750, Aptiva C+ Series
- 256K (160 pin) Pipeline Burst Cache Module $22.00 (Coast Celp)
- 512K (160 pin) Pipeline Burst Cache Module $39.00 (Coast Celp)
- 256K (160 pin) Async Cache Module – $59.00 compatible with IBM Aptiva A&M Series
- 256K (160pin) Async Coast Module – $29.00

	12NS	15NS	20NS	25NS
32Kx8	9.00	4.50	4.25	4.00
64Kx1	–	11.00	–	–
64Kx8	–	15.00 (5V)	–	–
128Kx8	–	29.50	26.00	24.00

Individual D-RAM Chips

FOR IBM & APPLE	40NS	50NS	60NS	70NS	80NS
1Megx1	–	–	5.00	4.00	2.90
1Megx4	–	–	19.90	18.00	17.00
1Megx4 (Zip Pk)	–	–	12.00	11.00	10.00
256x4(Page Dip)	–	–	7.25	6.75	6.50
256x4(Page Zip)	–	–	9.25	9.00	8.95
256x4(Video Zip)	–	–	–	10.95	9.95
256x8(SOJ)	–	–	12.00	11.00	–
256x16 SOJ	34.00	29.00	29.00	19.00	–
256x16 SOJ Edo	–	–	29.00	–	–
256x16 Video Zip	–	–	–	29.00	–

Make Your 486 Run like a Pentium®

Kingston Turbo Chip – 3X Faster, for 486 Based Dx^2, Dx, Sx^2, Sx............DNLY $129.00

Out performs Intel overdrive Pentium 83

UP TO 396% PERFORMANCE INCREASE!!

VIDEO MEMORY MODULES

Matrox Millennium	2Meg/4Meg/6Meg WRAM	89/159/229
Matrox Mystique	2Meg SGRAM	59
ATI 3D Pro Turbo	2Meg/4Meg	89, 179
ATI Xclaim 3D	4Meg SGRAM	179
ATI 3D Xpression	2Meg SDRAM	79
Apple PowerMac 4400	2Meg/4Meg	89/139
NEC Powermate Pro 150, 220	2Meg,/6Meg WRAM	129, 259
HP Vectra XV/6, VT/6, VA, XA	2Meg/6Meg WRAM	129, 259
Compaq 1Meg Video 213922-001	1Meg	69
Compaq Deskpro 2000, 4000, 6000	2Meg/6Meg WRAM	129/299

Many More Please Call

GATEWAY MEMORY

Dest. Big Screen D5 – SDRAM	8Meg/16Meg/32Meg/64Meg	59/99/179/429
Dest. Big Screen D6 – EDO (pairs)	4Meg/8Meg/16Meg/32Meg	24/44/68/139
Family PC w/MMX – SDRAM	8Meg/16Meg/32Meg/64Meg	59/99/179/429
G5-166, 200 Prof System – SDRAM	8Meg/16Meg/32Meg/64Meg	59/99/179/429
G5-166M, 200M MMedia System – SDRAM	8Meg/16Meg/32Meg/64Meg	59/99/179/429
G6-200 Prof. System – SDRAM	16Meg/32Meg	119/219
G6-Prof. M MMedia System – EDO	4Meg/8Meg/16Meg/32Meg	24/44/68/139
Multimedia G-5 Systems – SDRAM	8Meg/16Meg/32Meg/64Meg	59/99/179/429
Prof, P-5 Series – SDram	8Meg/16Meg/32Meg/64Meg	59/99/179/429

We Carry All GATEWAY Memory

NEC MEMORY

Ready 5010, 7010, 7020, 9010, 9022 / Ready 9510, 9520, 9522, 9530, 9532 / Ready 7022 (EDO)
Image P60, P90, D, P100E
(Pairs) 4Meg/8Meg/16Meg/32Meg — 24/42/69/139 — *We Carry All NEC Memory*

HEWLETT PACKARD MEMORY

Netserver 4/66LC-5/133LC (pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Netserver LE 486SX33 – 496DX266	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Netserver LH Plus 5/133, 5/166 (EDO, ECC)	16Meg/32Meg/64Meg/128Meg	119/229/499/999
Netserver 4/33LM – 5/100LM (pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Netserver 5/75LS – 5/133 LS4 (pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Pavillion 5010-7170 (pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Vectra 500 (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Vectra VA 6/180, 6/200 (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Vectra VE2 5/75 – 5/133 (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Vectra XA 6/180, 6/200 (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	29/42/69/139
Vectra XM4 Series	4Meg/8Meg/16Meg/32Meg	29/42/69/139

We Carry Memory for ALL Models – Call

We also sell Memory for: DEC, Sun, Zenith, Acer and Epson

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FORTUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25%sales tax. Returned orders or ordered wrong parts are subject to a 20% restocking fee. We accept International orders shipped via UPS Air, APO, FPO orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS – EXCHANGES ONLY. If you receive defective merchandise we exchange only—no refunds. We accept MC, VISA, Discover, AE, prepaid orders, purchase orders, wire transfer, COD (cashiers check) orders, cash & cashiers checks. Orders shipped by UPS, FEDX must be signed for.
• ALL MANFACTURER PART #'S ARE FOR REFERENCE ONLY • MINIMUM ORDER $40.00 • NO REFUNDS ON SHIPPING.

*certain restrictions apply. All prices final on date of sale.

IBM PS/1, PS/2 MEMORY MODULES

Aptiva 300, 500 Series	4Meg/8Meg/16Meg/32Meg	24/42/79/149
Aptiva 700 Series (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
Aptiva A Series (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
Aptiva C Series (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
Aptiva M Series	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 330 Models 6571-6576	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 330 Model 6577 (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 340 (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 350 Models 6581-6585	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 350 Model 6586 (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 350 Model 6587 (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 360	4Meg/8Meg/16Meg/32Meg	37/57/69/159
PC 730 Models 6875-6878 (pairs)	4Meg/8Meg/16Meg/32Meg	37/57/69/159
PC 730 Model 6877 (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC 750 Models 6885-6886 (pairs)	4Meg/8Meg/16Meg/32Meg	37/57/69/159
PC 750 Model 6887 (EDD, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/79/149
PC Server 310 (pairs)	4Meg/8Meg/16Meg/32Meg	37/57/69/159
PC Server 500 (ECC, pairs)	4Meg/8Meg/16Meg/32Meg	59/79/119/249
P/S 1, 30 Pin Simms	1/Meg/4Meg	12/34
P/S 1, 72 Pin Simms	4Meg/8Meg/16Meg/32Meg	37/57/69/159
P/S 2, 55SX, 65SX	4Meg	49
P/S 2, 53, 53LS, 56, 57	4Meg/8Meg	39/69
P/S 2, 95XP (ECC, pairs)	4Meg/8Meg	49/79
P/S 2 Server, 95, 195, 295 (ECC, pairs)	4Meg/8Meg/16Meg/32Meg	59/79/119/249

Call for All Rise 6000 Memory — Call for All Valuepoint Memory

IBM NOTEBOOK & LAPTOP MEMORY

MODEL	AMT. UPGRADED	MEMORY PRICE	BATTERY PRICE
Thinkpad 340, 345, 355, 360, C, CE	*4Meg/8Meg/16Meg*	*49/79/139*	*129.00*
Thinkpad 365C, CS, CD, E, ED	*4Meg/16Meg*	*39/119*	*129.00*
Thinkpad 365X, 365XD	*8Meg/16Meg/32Meg*	*59/119/269*	*129.00*
Thinkpad 380, 380D, 385D	*8Meg/16Meg/32Meg64Meg*	*79/139/239549*	*129.00*
Thinkpad 500, 510CS	4Meg/8Meg/16Meg	59/79/139	
Thinkpad 560, 560E	8Meg/16Meg/32Meg/64Meg	59/119/269/529	
Thinkpad 700, 720, 750, CL575X	*4Meg/8Meg/16Meg/32Meg*	*39/79/159/268*	*170.00*
Thinkpad 701, 701C, 701CS	*4Meg/8Meg/16Meg/32Meg*	*39/64/119/299*	*109.00*
Thinkpad 730T, TE	4Meg/8Meg/16Meg	49/89/139	
Thinkpad 755C, CE, CD, C5	*4Meg/8Meg/16Meg/32Meg*	*39/79/129/259*	*159.00*
Thinkpad 760C, CD, L, LD	*4Meg/8Meg/16Meg/32Meg*	*39/69/119/209*	*159.00*
Thinkpad 760E, ED, EL, ELD	*8Meg/16Meg/32Meg*	*59/119/269*	*159.00*
Thinkpad 760XD, 760XL	8Meg/16Meg/32Meg/64Meg	79/129/279/549	
Thinkpad 7650, 765L	8Meg/16Meg/32Meg64Meg	79/129/279/549	

COMPAQ MEMORY MODULES

Deskpro 486/25, 33L, 50L	2Meg/8Meg/32Meg	29/79/199
Deskpro 3/25I, 33I, 4/25IS, 66I	2Meg/4Meg/8Meg	39/69/89
Deskpro 386, 486 M Series	2Meg/4Meg/8Meg	29/39/69
Deskpro M Series Expansion Board	0K (no memory)	119.00
Deskpro 450, 4100, 575, 590, 5100, 5133	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Deskpro 575, 5120, 5133, 5150, 5160 (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Deskpro 2000, 4000, 6000 Series (EDO, pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Deskpro 5/60M, 5/66M, XE560 (quads)	2Meg/4Meg/8Meg/16Meg/32Meg	39/49/69/139/239
Deskpro XL (pairs)	4Meg/8Meg/16Meg/32Meg	49/69/139/239
Deskpro XL 6150, 6200 (ECC, pairs)	8Meg/16Meg/32Meg/64Meg, 128Meg	Call
Deskpro 2000, Presario 4112, 4122, 4712, 4716, 5526, 5528	1Meg Video	69
Presario 5536, 9232, 9234, 9240, 9250, 9260, 9642, 9660	1Meg Video	69
Presario 510, 520, 524, 660, 720, 724, 860	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Presario 920, 924, 954, 974, 978, 992	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Presario 833, 850, 860, 866	4Meg/8Meg/16Meg/32Meg	39/64/119/239
Presario 5528, 7110, 7152	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Presario 7170, 7180, 9536, 9546, 9548, 9564 (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Presario 9232, 9234, 9240, 9250, 9642, 9660 (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Prollant 1000 5/60, 2000, R, 4000, R (quads)	4Meg/8Meg/16Meg/32Meg	36/62/99/189
Prollant 1500, 1500R (pairs)	4Meg/8Meg/16Meg/32Meg	36/62/99/189
Prollant 4500, 4500R (quads)	4Meg/8Meg/16Meg/32Meg/64Meg	39/64/119/239/599
Prollant 5000, 5000R (pairs)	32Meg/64Meg/128Meg/256Meg	Call
Prolinea 4/25S, 4/33, 4/66	2Meg/4Meg/8Meg	29/39/69
Prolinea (enhanced), MT	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prolinea 575, 590, 5100, 5120, 5133 (pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prolinea 5100, 5120, 5133, 5150, 5166 (EDD pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prolinea 575E, 100E, 120E, 575MX (pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prolinea 590MX, 5120MX (pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prolinea 6150E, 6180E (pairs)	8Meg/16Meg/32Meg	69/119/239
Prosignia 300 5/75, 5/90, 5/120, 5/150 (pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159
Prosignia 500 5/90, 5/120, 5/150 (pairs)	4Meg/8Meg/16Meg/32Meg	34/57/89/159

COMPAQ NOTEBOOK/LAPTOP MEMORY

MODEL	AMT. UPGRADED	MEMORY PRICE	BATTERY PRICE
Thinkpad 340, 345, 355, 360, C, CE	*4Meg/8Meg/16Meg*	*49/79/139*	*119.00*
Armada 1100, 1120T, 1120, 1125	8Meg/16Meg/32Meg/64Meg	69/129/229/549	
Armada 1130, 1130T (pairs)	4Meg/8Meg/16Meg	49/69/129	
Armada 1510DM, 1520DM, 1550DMT	16Meg/32Meg/64Meg	139/239/579	
Armada 4100, 4110, 0, 4120, T, 4130T, 4131T	8Meg/16Meg/32Meg	69/129/239	
Armada 7710MT, 7730MT, 7750DMT	16Meg/32Meg/64Meg	139/239/579	
Concerto 4/25, 433	*4Meg/8Meg/16Meg*	*49/79/124*	*139.00*
Contura 4/25, 4/25C, 4/25CX	*4Meg/8Meg/16Meg*	*49/79/129*	*108.00*
Contura 400C, 400CX, 410C, 410CX	*4Meg/8Meg/16Meg*	*49/79/134*	*109.00*
Contura 420C, 429CX, 430C, 430CX	*4Meg/8Meg/16Meg/24Meg*	*49/79/134/199*	*109.00*
Contura Aero	*4Meg/8Meg/16Meg*	*39/79/139*	*109.00*
LTE 5000, 5100, 5200, 5300	*6Meg/16Meg/32Meg/64Meg*	*69/129/249/469*	*139.00*
LTE Elite 440C, CX, 4/75CX	*4Meg/8Meg/16Meg/24Meg*	*49/69/139/199*	*139.00*
LTE Lite 425	*4Meg/8Meg/16Meg*	*49/79/136*	*105.00*
Presario 1000, 1010, 1020, 1030, 1070, 1080	*8Meg/16Meg/32Meg*	*59/119/229*	*119.00*

DELL MEMORY

Dimension XPS M166S, M2090, P133s, 166s, 200s, P133v, 166v, 200v	8Meg/16Meg/32Meg	55/99/199
Dimension XPS P60, P75, P90, P100 (pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Dimension XPS P100c, 120c, 133c, 166c, XPS P75T, 10DT (pairs) FPM or EDO	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Dimension XPS Pro 150, Pro 200 (quads)	4Meg/8Meg/16Meg/32Meg	39/69/102/209
Dimension XPS Pro 150n, 180n, 200n (Edo pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Optiplex GL, GM, GMT (Edo pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Optiplex GS, GXL, GXM, GXMT (Edo pairs)	4Meg/8Meg/16Meg/32Meg	24/42/69/139
Optiplex GXI, GXpro, 6180, 6200 (Edo, Ecc)	16Meg/32Meg/64Meg/128Meg	119/229/469/999
PowerEdge 2100, 4100 (Edo, Ecc)	16Meg/32Meg/64Meg/128Meg/256Meg	119/224/469/999/2499

LASER PRINTER MEMORY UPGRADES

AMOUNT UPGRADED	OK Bd	256k	1	2	3	3.5	4	5	6	8	16	32
Brother 630, 631, 641, 645	–	–	39	59	–	–	–	–	–	–	–	–
Canon LBP 430	–	–	19	–	–	–	49	–	–	–	–	–
Canon LBP 860, 1260	–	–	–	19	–	–	49	–	–	79	99	179
Canon LBP4, 4Lite, 4plus	–	–	129	179	–	–	–	–	–	–	–	–
Epson Action Laser 1100, 1600	–	–	19	29	–	–	49	–	–	89	109	–
Epson Action Laser II	–	–	74	–	130	–	–	180	–	–	–	–
Epson 8000, 1800, 4000, 4100, 4300	–	–	89	–	130	–	–	180	–	–	–	–
Epson 1000, 1500, 5000, 5200	–	–	–	49	–	–	98	–	–	–	–	–
HP 2, 2D–	–	–	–	59	–	–	79	–	–	–	–	–
HP 3, 3D, 3P, 2P 2P+	–	–	–	*59*	–	–	*79*	–	–	–	–	–
HP 4, 4M, 4SI, 4SIMX	–	–	–	19	–	–	49	–	–	79	–	–
HP 4P, 4PLUS, 4MPm 1600, 1600CM	–	–	9	19	–	–	39	–	–	79	99	179
HP 4L	–	–	29	–	–	–	–	–	–	–	–	–
HP 3SI	–	–	9	–	–	–	39	–	–	79	–	–
HP 5L, 6L, 6LXi	–	–	–	–	–	–	49	–	–	99	–	–
HP 5P, 5MP, 4V, 4MV, 6P, 6MP	–	–	9	19	–	–	39	–	–	79	99	179
HP Design Jet 600, 650, 200	–	–	–	19	–	–	39	–	–	79	109	169
HP Design Jet 700, 750C Plus	–	–	–	–	–	–	29	–	–	49	89	179
HP Deskjet 500, 500C, 510, 550, 560	–	*29*	–	–	–	–	–	–	–	–	–	–
HP Deskjet 1200C, 1200C/P	–	–	–	39	–	–	49	–	–	89	–	–
HP Paintjet XL300	54	–	–	–	–	–	69	–	–	144	299	–
IBM Laser 4019, 4019E	–	–	–	–	–	109	–	–	–	–	–	–
IBM Laser 4029, 4037	–	–	–	–	–	–	49	–	–	–	–	–
IBM Laser 4039, 4079	–	–	–	*39*	–	–	*69*	–	–	*99*	–	–
Lexmark Medley 4C, 4x, 4SX	–	–	Call	Call	Call	–	–	–	–	–	–	–
Lexmark, Optra L, LX, R, RX	–	–	–	–	–	–	39	–	–	69	99	199
Lexmark Valuwriter 300,600	–	–	29	39	–	–	89	–	–	–	–	–
Lexmark Winwriter 200, 400, 600	–	–	29	39	–	–	89	–	–	–	–	–
NEC 90, 290	–	–	–	89	–	–	–	–	–	–	–	–
NEC 95, 97	–	–	–	59	–	–	–	–	–	–	–	–
Oki 400	–	–	–	59	–	–	–	–	–	–	–	–
Oki 400E, 400EX, 410E, 410EX	–	–	67	89	169	–	189	–	–	–	–	–
Oki 810E, EX, 600E, EX, 610E, EX	–	–	29	79	–	–	119	–	–	149	229	–
Oki 830, 840	–	–	–	59	–	–	–	–	–	–	–	–
Panasonic 4420/4450I	–	–	–	79	–	–	109	–	–	–	–	–
Panasonic 4410/4430	–	–	–	*59*	–	–	*99*	–	–	–	–	–
Panasonic 4450	–	–	89	–	–	–	–	–	–	–	–	–
Panasonic 4400/5400	–	–	49	69	–	–	109	–	–	–	–	–
Panasonic 4440, 5410	–	–	69	–	–	–	109	–	–	–	–	–
Panasonic 6500	–	–	14	29	–	–	69	–	–	–	–	–
Sharp 9400, 9460, 9600, 9700E	–	–	49	69	–	–	119	–	–	–	–	–
Sharp 9500, E, H, 9700, H	–	–	49	–	–	–	236	–	–	–	–	–

CUSTOMER SERVICE & TECHNICAL: OPEN M–F, 9–4 PST

All products brand new & guaranteed • We buy excess inventory

Trademarks are registered with their respective companies.

L.A. TRADE

22825 Lockness Avenue • Torrance, CA 90501

BATTERIES

★ ★ CALL FOR NOTEBOOK AND LAPTOP BATTERIES ★ ★
Compaq, IBM, Toshiba, Epson, AST, TI and More!!

ACER 730 thru 789	$129
Canon Innova Book 350, 360, 475	134
Compaq Contura 3/25, 4/25	109
Compaq Aero, 400, 410, 420, 430	109
Compaq LTe 5000 Series	139
Epson Action Note 650, 660	119
Epson Action Note 800, 866, 880, 910	119
IBM Thinkpad 355, 360	119
IBM Thinkpad 365 C, ED, XD	129
IBM Thinkpad 701	109
IBM Thinkpad 750, 755	179
IBM Thinkpad 755 CD, CE, CV, CX	179
NEC Versa 2400, 2405, 2430, 2435	159
NEC Versa E, V	$135
NEC Versa S	99
Sharp 3010, 3020, 3050, 3060, 3150	129
Sharp 8700, 8800, 8900	129
TI Exstensa 450, 455, 510, 515	139
TI Exstensa 550, 555, 560, 570	149
TI Exstensa 600, 605, 650	169
Toshiba 400, 405, 410, 415, 420, 425, 430 (NIMH)	219
Toshiba 100, 105, 110, 115, 200, 205	105
Toshiba 2100 Series	99
Toshiba 2400, 2450, 1900, 1950, 1960	109
Toshiba 4700, 4800, 4850, 4900	109
Toshiba T4500, T4600	159

TOSHIBA LAPTOP MEMORY

MODEL	AMT. UPGRADED	MEMORY PRICE	BATTERY PRICE
Libretto 50CT	8Meg/16Meg/32Meg/48Meg/128Meg	69/118/229/369/1049	
Dynapad T200, T200CS		Call	
Tecra 500CDT, CS, 510CDS, CDT	8Meg/16Meg/32Meg/48Meg/128Meg	69/118/243/Call/Call	
Tecra 520CDT, 530CDT	8Meg/16Meg/32Meg/48Meg/128Meg	69/118/243/Call/Call	
Tecra 700CS, 700CT (SDRAM)	8Meg/16Meg/32Meg	79/129/229	
Tecra 710CDT, 720CDT, 730CDT	8Meg/16Meg/32Meg/64Meg/128Meg	79/129/239/539/1079	
Tecra 730XCDT, 740CDT	8Meg/16Meg/32Meg/64Meg/128Meg	79/129/239/539/1079	
T2000SXE	*8Meg*	*94*	*170.00*
T2100 Series	*4Meg/8Meg/16Meg/24 Meg*	*39/59/119/189*	*119.00*
T1900, T4500, T4600, T4700, T4900 All Models	*4Meg/8Meg/16Meg/32Meg*	*39/79/129/239*	*109.00*
T2400, T3400, T3400CT, T3600	*4Meg/8Meg/16Meg*	*49/69/119*	*119.00*
Satellite T100CS, 105CS, 110CS, 110CT, 115CS	*6Meg/16Meg/32Meg*	*74/129/239*	*119.00*
Satellite 200CDS, 205CDS Series	*8Meg/16Meg/32Meg*	*79/129/239*	*119.00*
Satellite 220CDS	8Meg/16Meg/32Meg/48Meg/128Meg	79/129/249/369/1079	
Satellite T400 Series, T600 Series	*8Meg/16Meg/32Meg*	*79/129/239*	*229.00*
Portege 300	16Meg/32Meg	129/239	
Portege 610CT, 620CT, 650CT, 660CT	8Meg/16Meg/32Meg/64Meg	79/139/249/539	

NOTEBOOK, LAPTOP MEMORY

MODEL	AMT. UPGRADED	MEMORY PRICE	BATTERY PRICE
ACERNote 730C, 735C, 760C, 760CX, 780CX	*4Meg/8Meg*	*59/89*	*129.00*
ACERNote 763, 765, 782, 784, 786	4Meg/8Meg/16Meg	39/69/119	
ACERNote Light 350, 352, 355	*4Meg/8Meg/16Meg*	*49/69/129*	*179.00*
ACERNote Light 356, 358, 359, 361 (pairs) edo	*4Meg/8Meg/16Meg*	*49/69/129*	*179.00*
ACERNote Nuovo 971, 972, 372, 373, 374	8Meg/16Meg/32Meg	69/125/239	
ACERNote Pro 950, 954, 955, 957, 959 (pairs)	4Meg/8Meg/16Meg	59/79/129	
Ambra 5N Series	*4Meg/16Meg*	*69/149*	*120.00*
Ambra N-75, N-100	*4Meg/8Meg/16Meg*	*49/79/139*	*139.00*
AST Ascentia A41, A42	*8Meg/16Meg/32Meg/64Meg*	*79/139/269/629*	*178.00*
AST Ascentia P30, P50	8Meg/16Meg/32Meg	79/149/269	
AST Ascentia J10, J30, J50 (pairs)	8Meg/16Meg/32Meg/64Meg	79/129/249/359	
AST Ascentia 800N, 610N, 900N, 910N	*6Meg/16Meg*	*79/129*	*129.00, 195.00*
AST Ascentia 950N	*8Meg/16Meg*	*79/139*	*189.00*
AST Bravo & Explorer	*4Meg/16Meg*	*79/139*	*165.00*
AT&T Globalyst 130, 200, 250	*4Meg/8Meg/16Meg*	*49/79/119*	*139.00*
Austin DX4, DX2, SX2, SX Series	*4Meg/16Meg*	*69/169*	*159.00*
Austin Edge CD P-133 edo	8Meg/16Meg	89/149	
Austin Edge Duet (pairs) edo	16Meg/32Meg	79/139	
Austin Vista	4Meg/8Meg/16Meg/24Meg	49/79/139/199	
Canon 1100, 300P (pairs)	*4Meg/8Meg/16Meg*	*59/79/129*	*129.00*
Canon Innova Book 150, 175	*4Meg/16Meg*	*59/139*	*129.00*
Canon Innova Book 200LS	4Meg/8Meg/16Meg/24Meg	59/89/179/249	
Canon Innova Book 350CD, 360, 475	8Meg/16Meg	59/119	
Canon Innova Book 480, 480 edo	*8Meg/16Meg*	*69/119*	*130.00*
CTX EZ Book 500, 600, 700 Pent, Series	4Meg/8Meg/16Meg	59/89/119	
DEC HiNote	*4Meg/8Meg/16Meg*	*59/89/139*	*129.00*
DEC HiNote Ultra, Ultra II	4Meg/8Meg/16Meg	39/69/119	
DEC HiNote VP 520, 525, 535, 545 (pairs)	4Meg/8Meg/16Meg	39/69/119	
DEC HiNote VP 5100, 5120	8Meg/16Meg/32Meg/64Meg	69/119/219/669	
DEC HiNote VP, Css, LSS, CTS, LTS	8Meg/16Meg/32Meg/64Meg	69/119/219/669	
Dell Lattitude LM (pairs)	4Meg/8Meg/16Meg	39/69/129	
Dell Lattitude 433, C, CX	4Meg/16Meg	59/129	
Dell Lattitude LX, M	*4Meg/8Meg/16Meg*	*49/79/139*	*129.00*
Dell Lattitude XP, XPI	4 Meg/8Meg/16Meg	44/69/119	
Epson ActionNote 650, 650c, 660c, 660cx	*4Meg/8Meg/16Meg*	*39/79/139*	*119.00*
Epson ActionNote 880, 866c, 890, 910	4Meg/8Meg/16Meg/20Meg	39/69/134/199	
Epson ActionNote 4LC/25, 4LC/33, 45LC/2-50, 4000	*6Meg*	*89.00*	*90.00*
Fujitsu Lifebook 500, 600 Series edo	8Meg/16Meg/32Meg	69/139/269	
Fujitsu Monte Carlo, Montego, Milan	8Meg/16Meg/32Meg	69/139/269	
Gateway 2000 Colorbook 4/33	*4Meg/16Meg*	*69/179*	*135.00*
Gateway 2000 Nomad 425 DXL/SXL	*4Meg/16Meg*	*79/559*	*100.00*
Gateway 2000 486 Handbook or Liberty	4Meg/16Meg	49/139	
Gateway 2000 Solo Series (pairs)	4Meg/8Meg/16Meg	69/89/139	
Gateway Solo Series 2100, 2200 edo	8Meg/16Meg/32Meg	69/159/289	
Hitachi C-Series	8Meg/16Meg/32Meg	79/129/229	
Hitachi E-Series, MX Series	*8Meg/16Meg/32Meg*	*79/139/269*	*129.00*
Hitachi M-Series	*8Meg/16Meg/32Meg*	*69/119/249*	*129.00*
HP Omnibook 530, 600	*4Meg/8Meg/12Meg*	*49/69/99*	*60.00*
HP Omnibook 800	8Meg/16Meg/32Meg/64Meg	79/129/349/599	
HP Omnibook 4000C, CT, C	*4Meg/8Meg/16Meg*	*59/89/139*	*129.00*
HP Omnibook 5000CT, CTS, C, 5500CS	*8Meg/16Meg/32Meg*	*79/139/256*	*129.00*
Leading Edge Aviva 2000	8Meg/16Meg	69/139	
Micron MilleniaTransport Pentium (pairs)	8Meg/16Meg	89/149	
Midwest Micro Elite or Soundbook	4Meg/8Meg/16Meg	69/99/149	
Midwest Micro Elite or Soundbook Plus or Sndbk II, IIP	4Meg/8Meg/16Meg	69/99/149	
Midwest Micro Elite or Soundbook CD	4Meg/8Meg/16Meg	69/99/149	
NEC Ultralite Versa, E, V, MP	*4 Meg/8Meg/16Meg/32Meg*	*49/69/179/239*	*135.00*
NEC Versa S, Versa 2000C, D, 2205C	*4Meg/8Meg/16Meg*	*49/79/129*	*110.00*
NEC Versa 2400 Series, 2530, 2535 (Edo)	8Meg/16Meg	79/119	
NEC Versa 2600 Series (pairs)	8Meg/16Meg	79/129	
NEC Versa 4000, 4050/4080, 420D, 4230	4Meg/8Meg/16Meg/32Meg	59/79/139/299	
NEC Versa 6000, 6050, 6030	8Meg/16Meg/32Meg/64Meg	69/139/249/659	
NEC Versa 6200MX edo	8Meg/16Meg/32Meg/64Meg	69/139/229/659	
Olivetti Echos P75-P1335 (pairs)	4Meg/8Meg/16Meg	59/89/149	
Packard Bell Statesman	*2Meg/8Meg*	*29/79*	*189.00*
Panasonic CF-V21P, CF-580	*4Meg/16Meg*	*49/139*	*175.00*
Panasonic CF-V41P Series	*4Meg/8Meg/16Meg/32Meg*	*49/69/139/289*	*Call*
Protege 650CT, 660 CDT	8Meg/16Meg/32Meg/64Meg	Call	
Sager Midem, all models	*4Meg/8Meg/16Meg/32Meg*	*69/99/169/399*	*Call*
Samsung Sens 810	8Meg/16Meg/32Meg	79/139/247	
Sceptre Soundx, all models	4Meg/8Meg/16Meg	49/89/149	
Sharp 3030, 3040, 3070	8Meg/16Meg/32Meg	69/119/229	
Sharp 3010, 3020, 3050, 3060	*4Meg/8Meg/16Meg/32Meg*	*39/69/119/229*	*129.00*
Sharp 8150, 8650, 8660, 7700, 7760	*4Meg/16Meg*	*69/139*	*169.00*
Sharp 8700, 8800, 8900	*4Meg/8Meg/16Meg*	*49/69/139*	*129.00*
Sharp 9000, 9030, 9020, 9050, 9300CD, T edo	8Meg/16Meg/32Meg	69/129/229	
Sharp 9040, 9070 (pairs)	4Meg/8Meg/16Meg/32Meg	39/69/119/525	
Sharp 9080 (pairs) edo	4Meg/8Meg/16Meg	39/69/119	
Sharp Widenote 100T	8Meg/16Meg/32Meg	69/119/219	
TI 4000, TI 4000E, TI 4000M	*4Meg/16Meg*	*69/369*	*100.00*
TI 5000, 5100, 5200, 5300	8Meg/16Meg	79/139	
TI 6020, 6030, 6050, 6160	8Meg/16Meg/32Meg	59/119/711	
TI Extense, 450, 450T, 455, 455T	*4Meg/8Meg/16Meg*	*49/69/119*	*179.00*
TI Extense, 610, 516 (pairs) edo	*4Meg/8Meg/16Meg*	*49/69/119*	*179.00*
TI Extense, 650, 555, 560, 565, 570 (pairs)	*4Meg/8Meg/16Meg*	*49/69/129*	*169.00*
TI Extense, 600, 605, 650, 655, 665	*8Meg/16Meg/32Meg*	*69/129/349*	*179.00*
TI Extensa, 600, 605, 650, 900, T, CDT edo	*8Meg/16Meg/32Meg*	*69/119/249*	*179.00*
Twinhead, Altima, Compudyne, 486SX, DX, Tandy 4860	*4Meg/16Meg*	*49/139*	*169.00*
Winbook FX P100, P133, P150	8Meg/16Meg/32Meg	69/129/269	
Winbook XPC, XP	*16Meg/32Meg*	*129/236*	*119.00*
Winbook XP5	*32Meg*	*243*	*119.00*
Zenith Z-Note MX	*4Meg/8Meg/16Meg*	*59/74/139*	*Call*
Zenith Z-Note GT P75, P90 (pairs)	*4Meg/8Meg/16Meg*	*39/69/119*	*149.00*
Zenith Z-Star 4/33	*2Meg/8Meg*	*29/79*	*189.00*
Zenith Z-Star EX, E5	*4Meg/8Meg/16Meg*	*59/89/139*	*95.00*

PC CARDS (PCMCIA) VERSION 2.0

MODEL	PRICE	MODEL	PRICE
S-RAM Cards 1MEG	$109	Portable 6X CD Rom & PC Card	$299
S-RAM Cards 2MEG/4MEG	189/469	Portable 8X / 10X CD Rom & PC Card	399/419
PC Card Reader 16 Bit	149	*SCSI Type II*	*139*
33.6/14.4 Cellular Ready	229	Multimedia Combo, Sound/SCSI	349
Lan Ethernet (Coax), (10 Base T)	89	Type III 340 Mg Hard Drive	479
56.6/14.4 Data/Fax Modem	219	33.6 Data Combo Card 33.6/14 4 & Ethernet	399
33.6/14.4 Data/Fax Modem	129		

FLASH RAM (ATA) — Works with Digital Cameras Kodak DC-50 & More
4 Meg–79 8 Meg–119 16Meg–219 20Meg –265 40Meg–515 64Meg–699
COMPACT FLASH — 4Meg/8Meg 110/159

HARD DRIVES FOR LAPTOP & NOTEBOOK

ACER NOTE	1.4G	2.1G	3.08G
Lite Series	269	369	—
730-789	269	369	679
Pro 950-959	269	369	—
Nuovo 971, 972	269	369	—
COMPAQ	1.4G	2.1G	3.06G
Contura Series	299	499	796
LTe 5000-5400	324	553	—
FUJITSU	1.4G	2.1G	
Milan, Montego	269	369	
Monte Carlo	269	369	
Lifebook Series	269	369	
IBM THINKPAD	1.4G	2.1G	
355, 360, C, CS,P	324	553	
750, C, CE, CS, P	324	553	
755, C, CD, CE, CS	324	553	
755, CSE, CV, CX	324	553	
760, C, L, LD	324	553	

NEC VERSA	1.44G	2.1G	
E, M, P, S, V	324	553	
PANASONIC	1.4G	2.1G	
CF-V21P	269	369	
CF-V41	269	369	
SHARP	1.4G	2.1G	3.0G
7700, 7750, 8150	269	369	715
8650, 8660, 8700	269	369	715
8800, 8900	269	369	715
TOSHIBA	1.4D	2.1G	3.06G
100CS, 105CS,	269	369	—
110CS, CJ, 115CS	269	369	—
T1900, 1910	269	369	715
T1950, 1960	269	369	715
T2100, CS, CT	269	369	—
T2110CS	269	369	—
T2115CS	269	369	—
T2130CS, CT	269	369	—

TOSHIBA (cont)	1.4G	2.1G	3.08G
T2135CS, CT	269	369	—
T2150CDS, CDT, CDS	269	369	—
T2400CS, CT	269	369	715
T2450, CT	269	369	715
TOSHIBA TECR	1.44G	2.1G	
T700CS	324	553	
T700CT	324	553	
T710CDT	324	553	
T720CDT	324	553	
T730CDT	324	553	
UNIVERSAL	1.4G	2.1G	3.0D
IDE 19mm	269	369	715
SLIM 12mm	269	389	Call

310-539-0019
FAX: 310-539-5844

SECURITY WILL CALL WINDOW NOW OPEN

CALL TOLL FREE **1-800-433-3726** (US and Canada)

ESTAB. 1985

Prices & Availability Subject to Change Without Notice

Mon-Fri, 8:00 a.m. to 5:00 p.m. PST
Sat. 10:00 a.m. to 12:00 noon

Check out our website at www.4LATrade.com or E-mail: Sales@LATrade.win.net

PC UNIVERSE™

PRICE, SERVICE AND AVAILABILITY THAT'S OUT OF THIS WORLD!!!

NEW PC UNIVERSE DELUXE CARRYING CASE CALL!

NOTEBOOK COMPUTERS

HITACHI MOBILIZED COMPUTING

Visionbook Plus 4140

All you could want in a portable computer!

133MHz Pentium® Processor
16MB Memory
1.4GB HDD
33.6 Fax
10X CD Rom
12.1" HA-STN

$1799

Visionbook Pro 7560

This little powerhouse comes complete!

166MHz MMX Pentium® Processor
32MB Memory
3.0GB HDD
US Robotics 56K w/10BaseT Lan
10X CD • 13.3" XGA TFT

$4999

SHARP

$3699

PC9800T
Pentium® 166 MHz MMX Processor
32MB Memory
2.1 GB Hard Drive
10X CD Rom
33.6 Fax Modem
12.1" TFT XGA

PC9320T
Pentium® 150 MHz MMX Processor
16MB Memory
1.44 GB Hard Drive
10X CD Rom
33.6 Fax

$2789

CALL FOR SPECIALS ON REMANUFACTURED MODELS!

HITACHI VISIONBOOK ELITE
8560 Pentium® Processor 166MHZ MMX 16/2.1GB 56K, 10X CD 13.3" XGA TFT $4799

HITACHI VISIONBOOK PLUS
4140 Pentium® Processor 133MHZ 16/1.4GB 33.6K, 10X CD 12.1" HASTN $1799
4150 Pentium® Processor 150MHZ MMX 16/1.4GB 33.6K, 10X CD 12.1" HASTN $2499
4360X Pentium® Processor 166MHZ MMX 16/2.1GB 33.6K, 10X CD 12.1" TFT $3499

HITACHI VISIONBOOK PRO
7340 Pentium® Processor 133MHZ MMX 16/1.44GB 56K w/10BaseT Lan, 10X CD 12.1" TFT $3199
7360 Pentium® Processor 166MHZ MMX 32/2.1GB 56K w/10BaseT Lan, 10X CD 12.1" TFT $4499
7560 Pentium® Processor 166MHZ MMX 32/3.0GB 56K w/10BaseT Lan, 10X CD 13.3" XGA TFT $4999

ALL X2 PRODUCTS ARE CAPABLE OF 56KBPS DOWNLOAD, HOWEVER CURRENT FCC REGULATIONS LIMIT SPEEDS TO 53KBPS

SPEAK TO A PC UNIVERSE REPRESENTATIVE ON OUR INTERACTIVE WEB SITE - "UNBELIEVABLE"!

IBM

IBM760ED Pentium® Processor 133MHZ 16/2.1GB XGA 6XCD $3855
IBM760XO Pentium® Processor 166MHZ MMX 32/3.0GB XGA BXCD $4919
IBM760E Pentium® Processor 150MHZ 16/2.1GB TFT • Opt CD Rom $3645
IBM760XL Pentium® Processor 166MHZ MMX 16/2.1GB 12.1" TFT $3935
IBM760XL Pentium® Processor 166MHZ MMX 32/2.1GB 12.1" TFT ..... CALL
IBM765D Pentium® Processor 166MHZ MMX 32/3.0GB 13.3" TFT XGA BX ..... CALL
IBM765L Pentium® Processor 166MHZ MMX 32/3.0GB 13.3" TFT XGA ..... CALL
IBM560 Pentium® Processor 133MHZ B/2.1GB 11.3" DUAL $1965
IBM560 Pentium® Processor 133MHZ B/2.1GB 12.1" TFT $3935
IBM560E Pentium® Processor 150MHZ MMX 16/2.1GB 11.3" DUAL $2759
IBM560E Pentium® Processor 166MHZ MMX 16/2.1GB 12.1" TFT ..... CALL
IBM380 Pentium® Processor 150MHZ 16/1.08GB 12.1" DUAL $1769
IBM380 Pentium® Processor 150MHZ 16/1.35GB BX CD 12.1" DUAL $2069
IBM380 Pentium® Processor 150MHZ MMX 16/2.1GB BX CD 12.1" ACTIVE $3345

NEC

6050MH 150MHz MMX Pentium® Processor 16/1.44GB 12.1 TFT 10X* $3675
6050MH 150MHz MMX Pentium® Processor 16/2.1GB 12.1 TFT 10X* $3868
6050MX 150MHz MMX Pentium® Processor 16/2.1GB 12.1 XGA 10X* $4255
6200MX 166MHz MMX Pentium® Processor 32/2GB 13.3 TFT 10X $5514
2630CD 133MHz Pentium® Processor 16/1GB 10X 12.1"DUAL $1933
2650CD 150MHz MMX Pentium® Processor 16/1.44GB 10X DUAL* $2419
2650CDT 150MHz MMX Pentium® Processor 16/1.44GB 10X TFT* $3095

*33.6 FAX MODEM

IF YOU DON'T SEE THE NOTEBOOK COMPUTER YOU WANT CALL A PC UNIVERSE REPRESENTATIVE TODAY!!

In Touch With Tomorrow

TOSHIBA

220CDS 133MHZ Pentium® Processor 16/1.37GB 10X CD 12.1 Dual ..... CALL
440 CDT 133MHZ MMX Pentium® Processor 16/1.37GB 10XCD 12.1 TFT $2899
440CDX 133MHZ Pentium® Processor 16/1.37GB 10X CD 12.1 HCA* High Contrast Addressing $2449
460CDT Pentium® Processor 166MHZ MMX 32/2.0 GB 10XCD 33.6, 12.1" TFT $3899
300CT Pentium® Processor 133MHZ MMX 32/1.51GB 33.6, 10.4" TFT 3.75LBS ..... CALL
50CT Pentium® Processor 75MHZ 16/772MB 6.1" VGA ACTIVE 1.85LBS ..... CALL
520CDT Pentium® Processor 166MHZ MMX 32/2.02 12.1" TFT 10XCD 33.6 ..... $4399
530CDT Pentium® Processor 166MHZ MMX 32/2.02 12.1" TFT (1024x768) 10X 33.6 ..... $4749
730CDT Pentium® Processor 150MHZ 16/2.1GB TFT 6XCD ..... CALL CLOSEOUTS!
730XCDT Pentium® Processor 150MHZ MMX 16/2.1GB 12.1 TFT 10XCD 2B.B $3599
740CDT Pentium® Processor 166MHZ MMX 16/2.87GB 13.3 TFT 10XCD 2B.B ..... CALL
660CDT Pentium® Processor 150MHZ 16/1.2GB 6XCD 2B.B $3999
510CDT Pentium® Processor 133MHZ 16/2.02 GB TFT 10XCD $2899

COMPAQ

COMPAQ SERIES
1210 Pentium® Processor 150MHZ MMX 16/1.4 14X 33.6 12.1" HC $2279
1610 Pentium® Processor 150MHZ MMX 16/1.6 14X 56K 12.1" HC $2579
1620 Pentium® Processor 166MHZ MMX 16/2.1 20X 56K 12.1" HC $3165
7750MT Pentium® Processor 166MHZ MMX 32/2.1 33.6 12.1" TFT ..... CALL
15B50MT Pentium® Processor 150MHZ MMX 16/2.1 12X 33.6 12.1" TFT $3345

CALL A PC UNIVERSE REPRESENTATIVE TODAY FOR THE BEST PRICING ON ALL MEMORY PRODUCTS!

CALL

FUJITSU

CALL ON HOT NEW FUJITSU'S

Lifebook 555TX Series

- 150MHZ MMX Pentium® Processor
- 16MB Memory
- 2.0GB HD
- 10X CD-ROM
- 12.1" SVGA TFT

LIFEBOOK SERIES
4350X 133MHz MMX Pentium® Processor 16/1.3GB 10X 12.1 DUAL $1739
635TX 133MHz MMX Pentium® Processor 16/2.0GB 20X 33.6 12.1 TFT $3059
555TX 150MHz MMX Pentium® Processor 16/2.0GB 10X 33.6 12.1 TFT ..... CALL
655TX 150MHz MMX Pentium® Processor 16/1.3GB 33.6 12.1 TFT $3635
565TX 166MHz MMX Pentium® Processor 32/2.0GB 20X 33.6 12.1 TFT XGA ..... CALL
656TX 150MHz MMX Pentium® Processor 16/2.0GB 16X 33.6 12.1 TFT $4109

HEWLETT PACKARD

Authorized Dealer

300LX Palmtop $449
HP 320LX Palmtop ..... CALL
HP Omnibook 5700 Pentium® Processor 150MHz MMX 16/1.86GB 12.1 TFT $3559
HP Omnibook 5700 Pentium® Processor 166MHz MMX 16/1.86GB 12.1 TFT $4004
HP Omnibook 5700 Pentium® Processor 166MHz MMX 16/1.86GB 12.1 XGA TFT ..... CALL
HP Omnibook 5700 Pentium® Processor 166MHz MMX 32/2.79GB 12.1 XGA TFT ..... CALL

NEW HP OMNIBOOK 2000 SERIES CALL A PC UNIVERSE REPRESENTATIVE TODAY.

MONITORS

CALL

SAMSUNG ELECTRONICS

CB04147 3NE 14" $209
CMG73B7L 6NE 17" $589
CMH7379LST 17GLSi 17" ..... CALL
CFG9637LS 20GLSi20" ..... CALL
CGK5507M 500S 15" $299
CFX1577LS 21GLs 21" ..... CALL
CGE7507M 700S 17" $689
CG135607L 500b 15" $349
CGM7607L 700b 17" $629
CGC5607T 500p 15" ..... CALL
CGL17609T 700p 17" ..... CALL
CGX1609T 1000p 21" ..... CALL

MAG INNOVISION

DX15T 15" – .26 ..... $329
DX 700T 17" – .25 ..... $629
DJ 530 15" – .28 ..... $299
DJ 707 17" – .26 ..... $629
DJ 702e 17" – .28 ..... $569
DJ 717 17" – .26 ..... $729
10v2 14" – .28 ..... CALL
√510v² 15" – .28 ..... $279
710v² 17" – .28 ..... $489
720V² 17" – .28 ..... $529

NEC

JC-1575VMA-E500 15" $339
JC-1746UMA-E700 17" $659
JC-1572VMA - M500 15" $369
JC-1744UM A- P750 17" ..... CALL
JC-2145UMA - P1150 21" ..... CALL
JC-2144UMA E110 21" ..... CALL
JC-1576VMA A500 15" $339
JC-1736VMA A700 17" $619

ViewSonic®

E641-14" $209
E655-15" $295
15GA-15" $375
15GS-15" ..... CALL
17GA-17" $615
17EA-17" $549
17PS-17" $669
GT770-17" $655
GT775-17" ..... CALL
PT770-17" $709
PT755-17" $779
GB00-20" ..... CALL
GTB10-21" ..... CALL
OptiQuest 19" ..... CALL
OptiQues 21" ..... CALL

SONY

CPD - 100SX - 15" $339
CPD - 100SF - 15" $379
CPD - 200SX - 17" $629
CPD - 200SF - 17" $699
GDM - 17SE2T - 17" $859
CDP - 300SF 20" ..... CALL

SAMPO

KM411-14" $185
KM511L-15" $235
KM711L-17" $459
KM750-17" $605
KMB30-20" $885

PRINCETON GRAPHIC SYSTEMS

E040 - 14" $199
E050 - 15" $259
E070 17" $449
E072 - 17" $539
Ultra 80 - 20"" ..... CALL
Ultra 50 - 15"" ..... CALL

PRINTERS

EPSON STYLUS

$499

- 720 DPI
- 6 color technology
- Smooth gradations
- Prints up to 44" images
- Two year limited warranty
- Toll free technical support
- Live Picture

EPSON

EPSON STYLUS PHOTO

Stylus COLOR 400 ..... $199
Stylus Color 600 ..... $299
Stylus Color 800 ..... $449
Stylus Color Pro XL ..... CALL
LX 300 ..... $169
LQ 570+ $243
LQ 870 ..... $440
LQ 2070 ..... $379
LQ 2170 ..... CALL
FX 870 ..... $287
FX1170 ..... $379
FX2170 ..... CALL
OFX 5000+ $1389
OFX 8000+ $2339
Stylus 1520 ..... CALL
Stylus 3000 Color Inkjet Printer ..... CALL
Epson Expression 636 Scanner ..... CALL
PhotoPlus Color Photo Scanner ..... CALL
EPL-N1200 Laserprinter ..... CALL
EPL-N2000 Laserprinter ..... CALL

Canon

BJC-80 ..... CALL
BJC-250 ..... CALL
BJC-240 ..... $169
BJC-240L $159
BJC-620 ..... $285
BJC-4200 ..... $199
BJC-4550 ..... $469
BLC-4300 ..... CALL
LBP-465 ..... $345
Multipass C2500 ..... CALL

HEWLETT PACKARD

Authorized Dealer

HP DeskJet 670C Printer $209
HP DeskJet 692C Printer $289
HP 6LXi Printer ..... CALL
HP LaserJet 6PXi Printer ..... CALL
HP DeskJet 890CXI Printer ..... CALL
HP DeskJet 1000CXI Printer ..... CALL
HP DeskJet 1000C5E Printer ..... CALL
HP LaserJet 5P Printer ..... CALL
HP Laser Jet 5M Printer ..... CALL
HP DeskJet 1600C Printer $1299
HP DeskJet 1600CM Printer $1899
HP OfficeJet Pro 1150C Color Printer, Copier and Scanner ..... NEW

OKIDATA

OkiPage 4W Page Printer 4ppm $199
OP6e $379
OP6ex ..... CALL
OkiOffice 44 Multifunction ..... CALL
OKI PAGE 16N ..... CALL
OkiJet 2020 ..... CALL
ML 320Turbo $315
ML 321Turbo $439
ML 590Turbo $445
ML 591Turbo $599
ML 390Turbo ..... CALL
ML 391Turbo ..... CALL

brother

We're at your side

HL7300X LASER Printer, 6ppm, ..$319
HL-730 Plus ..... CALL
MFC-6550 Multifunction ..... CALL
MFC-1950 Plus $379
MFC-7000FC Multifunction ..... CALL

DIGITAL CAMERAS

EPSON

PC-Digital $319
PC-500 ..... CALL

Nikon

CoolPix 100 ..... $499
CoolPix 300 ..... CALL

Kodak

DC-50 ..... $612
DC-120 ..... $899

HITACHI MOBILIZED COMPUTING

ROC-2 ..... $719
ROC-2E $539
ROC-300 ..... $419

We also carry Canon, Olympus, Vivitar, Fuji and Many More!

PDA'S & HANDHELDS

SHARP

Zaurus ZR-3000 ..... $285
Zaurus ZR-3500X $379
Zaurus ZR-5800 ..... $375
Zaurus ZR-5800FX $469
NEW SHARP HANDHELD ..CALL

HITACHI MOBILIZED COMPUTING

HPW10E4 ..... $482
HPW10E4MB (w/modem) $565

U.S. Robotics

Pilot 1000 ..... $179
Pilot 5000 ..... $219
Palmtop Personal $269
Palmtop Professional $355

CASIO

Casiopeia A10 ..... $419
Casiopeia A11 ..... $475

HEWLETT PACKARD

Authorized Dealer

300LX Palmtop $449
320LX Palmtop $635

PC UNIVERSE™

VISA

1-800-PC-UNIVERSE

That's 1-800-728-6483

2302 N. Dixie Highway Boca Raton, FL 33431

CALL FOR FREE CATALOG

Fax 561-447-7549 • Local 561-447-0050 Web: Http://www.pcuniverse.com • Email:Sales@pcuniverse.com

HOURS (est)
Mon-Fri 8:30am to 9pm
Saturday 10am - 6pm
Sunday: 12pm - 5pm

- 15 Day Return Policy • 30 Day Exchange
- Some returns are subject to restocking fees
- All Items Returned Must Include All Original Packaging And Documentation
- Shipping And Handling Are Non Refundable
- No Returns Without RMA Number
- All Printers And Software Are Not Returnable
- All Items Carry A Full Manufactures Warranty
- All Logos And Trademarks Are Registered Trademarks Of Their Respective Holders
- We Are Not Responsible For Typographical Errors

ATTENTION: Due to Industry Price Changes Call for Current Pricing and Availability PRICES AND AVAILABILITY ARE SUBJECT TO CHANGE

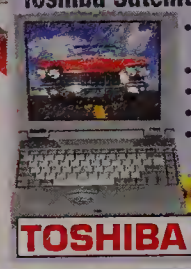
Circle 167 on reader service card

USA FLEX

The Best Prices on Over 20,000 Computer Products

WINNER OF 34 BEST BUY AWARDS — Best Buy Since 1984

Toshiba Satellite 220CDS



- 133MHz Pentium® Processor
- 16MB RAM
- 1.34GB HDD
- 10X CD-ROM
- 12.1" SVGA DSTN Color Display

Only $1949
CP5166

TOSHIBA

HEWLETT PACKARD

HP LaserJet 6Lse Printer

NEW!

- 6ppm
- 600dpi black laser printing

$399.95
PR12310

US Robotics — The Intelligent Choice in Information Access

US Robotics x2™ 56K Modem

Internal Model BND2130 . $147.99*
External Model BND2131 ..... $167.99*
*Price reflects mfr's $50 rebate. Expires 10/4/97

AS LOW AS $179.95*

Microsoft Office 97 Standard

Includes the following titles: Excel '97, Word '97, PowerPoint '97, and Outlook '97.
*Price reflects Microsoft $40 version upgrade rebate. Price before rebate is $219.95. SI2442

Only $149.95

iomega

Iomega Zip Drive

- Small, light and portable
- Store 100MB on each 3.5" disk

DR4602: Parallel DRI1050: SCSI DR5279: Insider

MONITORS/GRAPHICS CARDS

14"
Power User (13.2 VIS) MT0828 ..... $199.95
Viewsonic Optiquest V641 (13.2 VIS) MT1403 ..... $209.95
PRINCETON E040 (13.4 VIS) MT1517 $219.95
Philips/Magnavox MB4010 (13.2 VIS) MT1379 ..... $239.95

15"
PRINCETON E050 (13.8 VIS) MT1516 $289.95
Viewsonic Optiquest V655 (13.8 VIS) MT1404 ..... $299.95
Viewsonic E655 (13.8 VIS) MT1311 .. $319.95
NEC E500 (13.8 VIS) MT1547 ..... $389.95

17"
Power User (15.9 VIS) MT1178 ..... $469.95
PRINCETON E070 (15.8 VIS) MT1514 .. $499.95
Viewsonic G771 (16 VIS) MT1537 .... $599.95
MAG DX700T (16 VIS) MON0512 ..... $649.95
SONY 200SX (15.9 VIS) MON0415 .... $699.95

19"
PRINCETON E090 (18 VIS) MT1573 .... $869
HITACHI 751 (18 VIS) MT1468 ... $1,149.95

20"
Viewsonic Optiquest Q100 (18.4 VIS) MT1445 ..... $1,049
SAMSUNG 20GLS (18.7 VIS) MT1542 . $1,259
SONY 300SF (19 VIS) MON0418 ... $1,699.95

21"
ADI 6G (20 VIS) MT1464 ..... $1,299.95
HITACHI PRO 800 (20 VIS) MT1535 $1,399
Viewsonic PT813 (20 VIS) MT1455 .. $1,569.95
SAMSUNG 21GLS (19.7 VIS) MT1543 ... $1,649
*Monitor size refers to CRT/Visible image size.

HERCULES
T2312EDO Terminator 3D PCI, 2MB $99.95
T2314EDO Terminator 3D PCI, 4MB $129.95
T2212EDO Terminator 64 PCI, 2MB $79.95

PLAY
Snappy Video Capture $189.95

ATI
Video Xpression+ 2MB $99.95
3D Xpression+ PC2TV, 2MB $139.95
3D Pro Turbo PC2TV, 4MB $199.95

CREATIVE LABS
GBMA302 Graphics Blaster MA302 ..... $79.95
GBMA334 Graphics Blaster MA334 ..... $99.95

PC CARDS

MEGAHERTZ
56K x2 with XJack DMD2771 ..... $239.95
33.6 with XJack, Cellular capable DMD2204 $229.95
33.6 Modem 10Base-T with XJack DMD2319. $269.95
10Base-T with XJack (XJ 10BT) DEC1763 . $109.95
10Base-T (cc 10 BT) DEC1337 ..... $109.95

PRACTICAL PERIPHERALS
Internal 56K x2 DMD2416 ..... $145.95
Internal 56K K56Flex DMD2537 ..... $145.95
External 56K x2 DMD2415 ..... $195.95
External 56K K56Flex DMD2538 ..... $195.95

HAYES
Accura 33.6 External DMD2440 ..... $119.95
Hayes 56K K56Flex External DMD2526 $169.95
Hayes 56K K56Flex Internal DMD2525 $139.95

BOCA
Boca M56 (External) K56Flex DMD2472 .. $165.95
Boca M56 (Internal) K56Flex DMD2471 .. $145.95

US ROBOTICS
Sportster 33.6 Internal BND2138 ..... $89.95**
Sportster 33.6 External BND2139... $119.99**
Sportster 56K Internal BND2130..... $147.99*
Sportster x2 56K External BND2131... $167.99*
Courier V. Everything Internal DMD1649 ..... $229.95
Courier V. Everything External DMD1650 ..... $249.95

*Price reflects mfr. $50 mail in rebate offer valid 7/1/97 - 10/4/97.
**Price reflect s mfr. $20 mail in rebate offer valid 8/3/97 - 10/4/97.

MULTIMEDIA/CD-ROM

CREATIVE LABS
Blaster CD 24X EX7967 ..... $149.99
Sound Blaster AWE64 Gold EX7684 ..... $199.99
Sound Blaster AWE64 Value EX7814 ..... $99.99
Sound Blaster 16 Basic EX7961 . $69.99
Creative PC-DVD DR6307 . .... $499.99

PINNACLE MICRO
4X4 CD-Writer Internal DR5513 .. $739
4X4 CD-Writer External DR5512 .. $839

PANASONIC
Portable 4X CD-ROM Drive DR4853 .. $299.95
Portable 4X CD-ROM Drive with Sound Card and Speakers DR4940 ..... $399.95
Portable 8X CD-ROM Drive DR5651 .. $399.95
24X CD-ROM Atapi EIDE Internal Drive DR6620 ..... $179.95
24X CD-ROM SCSI Int. Drive DR6619 .. $219.95

PHILIPS
2X/6X CD-EasyWriter Internal DR5746 ..... $499.95
2X/6X CD-EasyWriter External DR5747 ..... $549.95
8X CD-ROM Drive Internal DR5208.... $199.95
8X CD-ROM Drive External DR5429 .. $299.95

HP SUPERSTORE
HP CD-Writer 2X/6X Internal DR6042 ..... $379.95
HP CD-Writer 2X/6X External Parallel DR6041 ..... $479.95
HP CD-Writer 2X/6X External SCSI DR6043 ..... $479.95

PRINTERS...LASER/INK JET/DOT MATRIX

HP PRINTERS
DeskJet 340C PR11412 ..... $299.95
DeskJet 672C PR12302 ..... $199.95
DeskJet 694C PR12125 ..... $299.95
DeskJet 820Cse PR11480 ..... $299.95*
DeskJet 870Cse PR11792 ..... $399.95*
DeskJet 1600C PR11386 ..... $1349.95
LaserJet 5se PR12268 ..... $1049.95
LaserJet 6Lse PR12310 ..... $399.95
LaserJet 6Pse PR12301 ..... $799.95
LaserJet 6MP INP0975 ..... 999.95
OfficeJet 570 color 4-in-1 PR12303 ..... $599.95

EPSON
DFX-5000+/8000 PR11695/PR11694 ..... $1579.95/$2499.95
Stylus Color 400 PR12121 ..... $199.95
Stylus Color 600 PR12126 ..... $299.95
Stylus Color 800 PR12127 ..... $449.95
Stylus 1520 PR12430 ..... $799.95
Stylus Color 3000 (PC) PR12407 ..... $1999.95
Stylus Color Photo PR12380 ..... $499.95

BROTHER
HL-720 (Windows Only) PR11689 ..... $299.99
HL-730DX (Window & DOS) PR11752 $329.95
HL-760 (1200x600) PR12043 ..... $399.95
HL-1060 (10ppm) PR12042 ..... $699.95
MFC-690 (thermal) PR11488 ..... $269.95
MFC-1950+ (ribbon) PR11487 ..... $399.95
MFC-4550 (laser) PR11715 ..... $799.95
MFC-6550MC (laser) PR11716 ..... $999.95

OKIDATA PRINTERS
OkiPage 4W (Windows Only) PR11702 . $199.95
OL600e PR11418 ..... $299.95*
ML320 PR11771 ..... $319.95
ML321 Turbo PR11772 ..... $459.95
ML590 PR11302 ..... $439.95
ML591 PR11303 ..... $589.95

CANON
BJC-240 PR11764 ..... $169.95*
BJC-4200 PR11763 ..... $199.95*
BJC-4550 (up to 11x17) PR11766 .. $499.95
BJC-620 PR11765 ..... $299.95
C2500 (Fax, Scan, Print, Copy) PR11712 $499.95*

LEXMARK
Color Jetprinter 2050 PR11929 ..... $199.95*
2380/2381 Plus Dot Matrix Printer PR12328/PR12329 ..... $319.95/$429.95
2390/2391 Plus Dot Matrix Printer PR12330/PR12325 ..... $369.95/$469.95
4079 Plus PR11318 ..... $2699
4039 10 Plus PR11256 ..... $899.95*
Optra R Plus PR11421 ..... $999.95*
Optra Lx+/Optra Lxn+ PR11422/PR11699 ..... $1599.95*/$1999.95*
Optra C PR11423 ..... $4299.95*
Optra S 1250 12ppm PR12345 ..... $1089.95
Optra S 2450 24ppm PR12340 ..... $2179.95
Optra N-240/Optra N-245 w/16MB RAM PR11698/PR11697 ..... $2799.95*/$3299.95*

NEC
SuperScript 860 (laser) PR11494 ..... $399.95
*While supplies last.

DESKTOP SYSTEMS

IBM 300GL SERIES
P200, 32MB, Open Bay, No O/S CP5036 .... $1219
P166MMX, 16MB, 2.5GB, WIN-95 CP5035 ... . $1199
P200, 32MB, 2.5GB, WIN-95 CP5034 .... $1299
P200MMX 16MB, 2.5GB, 16X CD-ROM, WIN-95 CP5033. ..... $1599

Full Line of IBM Monitors Available!

NEW COMPAQ DESKPRO SERIES
DeskPro 2000, DT, P166MMX, 16MB, 2.1GB CP5248 .... $1199
DeskPro 2000, MT, P166MMX, 32MB, 3.2GB, 16X CD CP5254 ..... $1619
DeskPro 2000, DT, P200MMX, 16MB, 2.1GB CP5252 ..... $1389
DeskPro 2000, MT, P200MMX, 32MB, 3.2GB, 16X CD CP5247 ..... $1769
DeskPro 4000, DT, P166MMX, 16MB, 2.4GB CP5259 ..... $1399
DeskPro 4000, DT, P200MMX, 32MB, 2.4GB CP5256 ..... $1679
DeskPro 4000, DT, P233MMX, 32MB, 3.2GB, 16X CD CP5253 ..... $2129

Compaq & HP models do not include monitor unless otherwise stated.

USA FLEX MINITOWER SYSTEMS w/512K CACHE
Flex Special 6x86-PR166, 16MB, 2.0GB, 4MB/3D, 16xCD CP5413 ... $999
Flex Performer 6x86-PR200, 32MB, 4.0GB, 4MB/3D, 20xCD CP5414. $1399
Flex UltraPerformer 6x86-PR233, 32MB, 4.0GB, 4MB-WRAM, 20xCD CP5415 ..... $1849
CyberNet2 15" Monitor & Printer P/200MMX, 32MB, 2.0GB, 2MB/3D, 20xCD BN4349 ..... $1999
Basic Workstation & 14" Monitor P/166, 32MB, 2.0GB, 1MB/64-bit, 16xCD BN4348 ..... $1199
Business Workstation & 17" Monitor P/200MMX, 32MB, 4.0GB, 2MB/128-bit, 20xCD BN4347 ..... $1899

HEWLETT-PACKARD VECTRA VL SERIES PC
VL5-DT-166MMX DT, 166MMX, 16MB, 1.6GB, 256KB, CP5212 ..... $1199
VL5-DT-200MMX DT, 200MMX, 32MB, 2.5GB, 256KB, 8X CD, CP5224. $1629
VL5-MT-166MMX DT, 166MMX, 16MB, 2.5GB, 512KB, CP5225 ..... $1299
VL5-MT-200MMX DT, 200MMX, 32MB, 2.5GB, 512KB, 8X CD, CP5227.. $1729

DIGITAL IMAGING

SONY
NEW! Digital Mavica MVC-FD5 Camera IN6346. $399
DSC-F1 Digital Zoom Camera IN6191 . $699.95

KODAK
DC20 Digital Camera INP0890 ..... $199.95
DC50 Digital Zoom Camera INP0647 .... $699.95
DC120 Digital Zoom Camera INP1132 ..... $999.95

VIVITAR
ViviCam 2000 Digital Camera IN6357 ..... . $229
ViviCam 3000 Digital Camera IN6359 ..... $399

MICROTEK
Scanmaker E3 Flatbed Scanner IN5573 ..... $199.95
Scanmaker E6 Flatbed Scanner IN5593 ..... $329.95
Scanmaker E6 Pro Flatbed Scanner IN5594 .. $529.95

UMAX
Astra 600P Flatbed Scanner IN6253 ..... $199.95
Astra 600S Flatbed Scanner INP1145 NOW ONLY! $199.95
MDX 8000 Digital Camera IN6251 ..... $479.95

IBM LAPTOP 380D

IBM.

- 150MHz Pentium Processor
- 1.3GB Hard Drive
- 16MB RAM
- 12.1" DSTN SVGA Color Display
- 8X CD-ROM

$1999
CP4773

HEWLETT PACKARD

PALMTOP 320LX

- 640 x 240 Backlit Screen 4MB: CP4970

NEW!

$659
300LX w/ 2MB: CP4971
$469

COMPAQ DESKPRO 2000

- Intel Pentium 166MHz w/MMX
- 16MB RAM
- 2.1GB HDD

CP5248
$1199
Monitor not included.

EPSON

Stylus Color Photo

NEW!

- 6 Color Printing

$499.95
PR12380

NOTEBOOK COMPUTERS

TOSHIBA
Satellite 220CDS, P133, 12.1"DSTN, 1.3GB CP5166 ..... $1949
Libretto 50CT P75, 6.1" TFT, 772MB CP5205 ..... $1949
Satellite Pro 440CDX, P133MMX, 12.1" DSTN, 1.3GB CP5209 ..... $2399
Satellite Pro 440CDT, P133MMX, 12.1" TFT, 1.3GB CP5210 ..... $3299
Satellite Pro 460CDT, P166MMX, 12.1" TFT, 2.0GB CP5208 ..... $3799
Tecra 520CDT, P166MMX, 12.1" TFT, 2.1GB CP5206 ..... $4299
Tecra 530CDT, P166MMX, 12.1" XGATFS, 2.1GB CP5207 ..... $4699
Portege 300CT P133MMX, 10.4" TFT, 1.5GB CP5204 ..... $3399

HITACHI Vision Book Series
P133, 1.4GB, 16MB, 10X, 12.1" HASTN CP5239 ..... $1799
P150MMX, 1.4GB, 16MB, 10X, 12.1" HASTN CP5240 ..... $2499
P166MMX, 2.1GB, 16MB, 10X, 33.6, 12.1" TFT CP5241 ..... $3499

HEWLETT-PACKARD Omnibook 5700
5700CT, P150 MMX, 2GB, 12.1" TFT CP4505 ..... $4299
5700CTX, P166 MMX, 3GB, 12.1" TFT CP4506 ..... $5199

IBM ThinkPad
380 P150, 1.08GB, 16MB, 12.1" DSTN CP4775 ..... $1749
380D P150, 1.35GB, 16MB, 8X, 12.1" DSTN CP4773 ..... $1999
380D P150MMX, 2.1GB, 16MB, 8X, 12.1" TFT CP4774 ..... $3299
560 P100, 810MB, 8MB, 11.3" DSTN BN4310 ..... $1499
560 P133, 2.1GB, 8MB, 11.3" DSTN CP4220 ..... $1899
760XD P166MMX, 3GB, 32MB, 8X, 12.1"XGA TFT CP4435 ..... $4789

ACER
610CD, P150, 1.4GB, 16MB, 10X CD, 11.3" DSTN CP4934 ..... $1799
610CDT, P150, 1.4GB, 16MB, 10X CD, 11.3" TFT CP4933 ..... $2399

COMPAQ Armada Series
4150 P150MMX, 1.6GB, 16MB, 10X, 21.1" CSTN CP5293 ..... $2499
4160T P166MMX, 2.0GB, 16MB, 10X, 12.1" CTFT CP5294 ..... $3499
1530DM P133MMX, 1.4GB, 16MB, 33.6, 10X, 12.1" CSTN CP5292 ..... $2899
1580DMT P150MMX, 2.1GB, 16MB, 33.6, 10X, 21.1" CTFT CP5295 ..... $3699

TARGUS® A TRADITION OF EXCELLENCE

SP2494

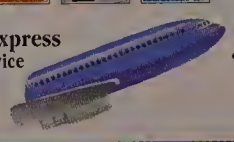
INSTANT $20 off this Targus leather bag with purchase of any notebook computer

USA FLEX

471 Brighton Drive • Bloomingdale, IL 60108
Phone: 630-893-0345 • Fax: 630-351-7204
6AM-11PM(CT) Mon.-Fri • 9AM-4PM(CT) Sat. & Sun

Code # PM10A7
Please reference this code when ordering

Airborne Express Delivery Service Available



1-800-876-5606

www.USAFLEX.com

Circle 241 on reader service card

MIDWEST COMPUTER WORKS

Where Corporate America Shops!

✓ Knowledgeable Sales Staff ✓ Fast Delivery ✓ Quality Top Name Brands ✓ Technical Support

Best Buy

OVER 80,000 PRODUCTS SHIPPED AT LOWEST PRICES!

YOUR COMPLETE COMPUTER SOURCE!

NEW Lightweight Notebooks!

TOSHIBA
Portege 300CT

MMX NEW!

- MMX Pentium® 133MHz
- 10.4" Active Color Display, 800x600
- 32MB EDO RAM exp. 64, 1.6GB HDD
- 64-bit HiQVideo Graphics Controller
- 33.6Kbps V.34 Voice/Data/FAX Modem, Full-Duplex Speakerphone, Weighs 3.8 lbs.
- PC Card Slots, 2 Type II or 1 Type III
- Sound Blaster Pro Audio, IrDA Port
- AccuPoint integrated pointing device
- Lithium Ion Battery, 3 Year Warranty

$3359

Only 3.8 lbs!

TOSHIBA
Libretto 50CT Mini-Notebook

- 6.1" TFT Display, 600x480 Resolution
- 75MHz Pentium, 16MB EDO RAM (exp. 32MB)
- 722MB IDE HD, External 3.5" Type II PC Card
- Graphics Controller with 1MB EDO DRAM
- SoundBlaster Pro Audio, Lith-Ion Battery, 1.5-2 hrs.
- Preinstalled Software: Windows 95, Puma TranXit, Microsoft Internet Explorer, Toshiba Utilities and Accessories, Hypertext On-line Documentation, and Run-time Video for Windows

FULL-FUNCTION WINDOWS 95 MINI-NOTEBOOK!

$1949

Only 1.85 lbs!

TOSHIBA
Satellite Pro 440CDT

NEW!

- MMX Pentium® 133MHz
- 12.1" TFT (800x600)
- 16MB exp.144, 1.4GB HD, 10xCD
- 33.6 Kbps voice/data/fax Modem
- Li-Ion Battery, 256 L2 Cache
- 3 Yr. Warranty, 16-bit Audio

MMX

Zoomed Video Support!

Lease It! **$111** a month

$3299

New & Improved Toshiba Releases!

Satellite 220CDS - 12.1" DS, P-133 16MB 1.4GB 10X...$1899

Tecra 740CDT - 13.3" TFT, P-166MMX 16MB 3.0GB 120X 33.6...$6249

SHARP
PC-9800T

NEW!

- Pentium® MMX 166MHz Processor
- 12.1" TFT Display (1024x768 Res.)
- 32MB EDO RAM, 2MB VRAM
- Removable EIDE 2.1GB HD
- Removable 10X CD-ROM Drive
- 16-bit Sound
- Type II or III PC Card Slot
- IrDA Infrared Communication
- 33.6Kbps Voice/Fax Modem
- 3 Yr. Parts/Labor Warranty, 1 Yr. SharpFast Instant Exchange Warranty

1 Year **INSTANT SHARPFAST** Exchange Warranty!

$3999

MMX

THE NOTEBOOKS YOU WANT AT THE PRICES YOU NEED!

US Robotics

X2 56Kbps modem

56Kbps x2 XJACK PC CARD MODEM (XJ1560)

$229

- x2 Technology for up to 56K download capability, plus 28.8 & 33.6Kbps S/R capability
- Built-in Megahertz XJACK connector to connect to standard phone line
- Caller ID/Telephone Answering Machine Features
- Hot-Swappable, Auto Install
- Digital Line Guard for power protection
- FREE Data & Fax Software

LEXMARK
Optra R+ Laser Printer

- Maximum 1200dpi Laser Resolution
- 16ppm @ 600dpi or 8ppm @ 1200dpi
- 4MB Preinstalled RAM, expandable to 64MB
- Network Capability, High Speed Parallel Connection
- Postscript Level 2 and PCL 5 Emulations
- Preinstalled 39 PS 2 Scalable Fonts
- 200 Sheet Paper Tray
- 1 Year Warranty

BEST SELLING NETWORK PRINTER!!

$992

Call for pricing on the complete quality line of Lexmark laser and inkjet printers.

HEWLETT PACKARD

HP OmniBook 5700CTX

Now! Intel Pentium MMX Technolgy!

- MMX Pentium-166MHz
- 12.1" TFT Display, 1024x768
- 32MB EDO RAM, 3GB HD
- 64-bit Graphics Accelerator
- SoundBlaster Pro Stereo Sound
- 4hr. Li-Ion Battery Life
- 3 Year Warranty

$4799

NEW!

HP LaserJet 6Lxi Laser Printer

- 600dpi Laser Resolution
- 6ppm, 2500 Pages per Toner
- 1MB RAM, expandable to 9MB
- Parallel Interface Connection
- 100-sheet Multi-size Paper Tray
- Preinstalled 26 TrueType Fonts

$385

We carry the full line of HP products. Call today for discount pricing!

Attention Server Users... Limited Time Only Special! Call Now.

HP Vectra 320 Server **$998**

166MHz, 16MB RAM, 1.2GB HD, Windows 95 and more. Call for details.

Lease a HP Notebook Starting at $59 a Month!!

BEST BUY!

ADI America
MicroScan 5V 17" Display

- 17" (16" Viewable) Flat Square Tube, Enhanced Contrast Display
- 1280x1024 @ 60Hz Resolution
- .28 Trio Dot Pitch, Anti-glare Dark-tinted Coating
- 95MHz Video Bandwidth
- Front Panel Controls
- Energy Compliant

$479

ALL OUT PRICE BLOWOUT

UMAX
Astra 600S Scanner

- 300x600dpi Optical, 4800x4800dpi Interpoleted
- Presto PageManager, VistaScan Color Software
- 1-pass Cold Cathode Lamp Technology
- SCSI II interface

$169*

30-Bit Color!

Graphics for Professionals!

NEW!

APC
AMERICAN POWER CONVERSION

Back-UPS Office

UPS - ALL IN ONE! $25,000 Guerantee

WE CARRY THE FULL APC POWER PROTECTION LINE!

- Full-time Surge Suppression, Site-wiring Protection
- Internet Ready Fax/Modem Protection
- 10 Min. of Battery Backup

$169

YOUR APC HEADQUARTERS!

US Robotics

X2 56Kbps modem TECHNOLOGY

Sportster 56K Ext. Faxmodem

Sportster 56K allows Internet/Online users to download information from x2-capable service providers at up to 56Kbps while uploading information (like web addresses) at up to 33.6 Kbps.

- x2 Technology for up to 56Kbps Internet download capability, plus 28.8 and 33.6 Kbps send and receive
- Fax: V.17 Group III 14,400 & 9600bps send/receive fax
- Maximum Throughput: 115.2Kbps with compression
- Automatically selects x2 or V.34/33.6Kbps
- Universal Compatibility down to 300bps
- 5 Year Limited Warranty

$169*

* After Mail-in $50 Rebate

NOTEBOOKS

ACER
Extensa 610CDT P150 1.4GB 11.3"TFT 10X 16M. ...2492
M 7063 P166MMX 3G 32B 12.1"TFT 10X 33.6...4997
MSTP105CS P-150 1.3G 16M 12.1" DS 12X 33.6...1989
P 2000CX P-150 2.1G 16M 13.3" TFT 33.8...3777
P2030CX P200MMX 3.1G 48M 13.3" TFT 33.6 16x ...4829

AST
Ascentia A60+ P150 1.4G 16MB 10X 12.1"TFT...2662
Ascentia A70+ P150MMX 2.1G 16MB 33.6 10X 12.1"TFT...3089

COMPAQ
Presario 1210 P150 16M 14X 1.4G 12.1"DS 33.6...2199
Presario 1620 P168 16M 20X 2.1GB 56K 12.1DS...2789
Armada 1585DMT P150MMX 2.1G 16M 12.1"TFT 12X 33.6...3499
Pro 5400 P-150 2.1G 32M 12.1" TFT...3839

CTX
2730CDT P-133 1GB 16MB 12.1"TFT 6X/Free Case ...1999
2760MS P-166MMX 1.3GB 12.1DS 6X ...2437

DPS
Dacer P120 1.3G 16M 12.1" DS...1939
Dacer 800 P200MMX 2.16G 16M 13.1"TFT 10xCD ...4189

FUJITSU
Lifebook 656TX P150MMX 2G 16M 12.1"TFT 16X 33.6 4099
Lifebook 635T P133 1.3G 16M 12.1"TFT 28.8.... 2268

HEWLETT PACKARD
Omnibook 2000CS P133 1.4G 16MB 12.1"DS... 2199
Omnibook 2000CT P133 1.4G 16MB 12.1"TFT... 2724
Omnibook 5700CT P166MMX 2G 12.1"TFT 16M ... 4099
Omnibook 5700CTX P166MMX 2G 16M 12.1"TFT XGA ... 4299
Omnibook 5700CTX P166MMX 3G 16M 12.1"TFT XGA ... 4799

HITACHI
Flex X166T P166MMX 2.1GB 16M 12.1TFT 8X 33.6...3299
Visionbook Elite P166MMX 2.1G 16M 13.3"TFT 10X 56K ...4483
Visionbook Plus P133 1.4G 16M 12.1DS 10X 33.6 ...1658
Visionbook Plus P166MMX 2.1G 16M 12.1TFT 10X 33.6 ...3269
Visionbook Pro P133MMX 16M 1.4G 12.1TFT 10X 56K ...2929
Visionbook Pro P166MMX 32M 2.1GB 12.1TFT 10X 56K ...4299
Visionbook Pro P166MMX 32M 3G 13.3TFT 10X 56K ...4658

IBM
Thinkpad 380 P150 1.06G 16M 12.1"DS...1739
Thinkpad 560E P166MMX 2 1G 16M 12.1"TFT...4319
Thinkpad 760XD P166MMX 3GB 32M 12.1" XGA TFT 8X ...4799
Thinkpad 765D P166MMX 3.0G 32M 13.3"TFT ...6854

NEC
Versa 50MX P150 2.1GB 16M 12 1" TFT 10X 33.6 ...4249
Versa 100MX P166MMX 2.1G 32M 13.3" XGA 10X 33.6 ...5399

SAMSUNG
Sens Pro 523 P133 32M 2.1G 12.1"TFT 10X NT ...2799
Sens Pro 525 P150MMX 2.1G 48M 12.1"TFT 10X...3199

SHARP
PC 9320T P-150MMX 1.6GB 32M 11.3"TFT 10xCD..CALL
PC 9300T P-150 1.44G 11.3" TFT 10xCD 33.6...2399
PC 9800T MMX-P166 2G 32M 12.1" TFT 10X 33.6...3999

SONY
Vaio PCG-707C P166MMX 2.1G 32M 14.5X 33.6 12.1"TFT ...4499
Vaio PCG-705C P150MMX 2.1GB 16M 14 5X 33.6 12.1TFT ...3499

TOSHIBA
500CDT P-120 1.2G 16M 12.1" TFT 6xCD...2989
650CT P-133 1.2G 16M 11.3" TFT...3019
660CDT P-150 1.3G 16M 11.3" TFT...4279
730XCDT P150MMX 2.0G 16M 12.1" TFT 10X 28.8...4670
740CDT P166MMX 3G 16M 13.3" TFT 10X 33.6...6249
220CDS P-133 1.4G 16M 12.1" DS 10X...1899
300CT P133MMX 2.1G 32M 10.4" TFT 33.6...3359
440CDX P133MMX 1.4G 16M 12.1" DS 10X 33.6...2419
440CDT P133MMX 1.4G 16M 12.1" TFT 10X 33.6...3299
460CDT P166MMX 2.1G 16M 12.1" TFT 10X 33.6...4169
520CT P166MMX 2.1G 32M 12.1" TFT 10X 33.6...4259
530CDT P166MMX 2.1G 32M 12.1" TFT 10X 33.6...4599

NETWORKING

3COM Etherlink IIIB ISA 10BT TPO ...57
3COM 3C905TX PCI / 5-pack ...89/419
3COMSuperstack II 12-pt Hub/24-pt Hub...248/379
Artisoft Lantastic V7.0 1-user/5-user ...86/319
Digi ... ALL MODELS IN STOCK ...CALL TODAY!
Intel EtherExpress Pro 10+...69
EtherExpress Pro 10/100TX PCI...79
Linksys EtherFast 10/100BT TX LAN...74
Linksys Workgroup Hub 10-port/20-port...105/186
Netgear EN104 4-port 10BT Hub...58
Netgear EN116 E-net 16-port 10BT Hub...178
Netgear FE508 100B-TX 8 PORT ...549
Novell NetWare 4.1 / IntranetWare 10-user.....CALL/1399
SMC Tigerstack 28Port 10BT...799
SMC TigerHub 6 10BT...159
SMC TigerHub TP12 10BT...343
SMC EtherEZ 8416T / 5-pack ...79/356
SMC EtherEZ PCMCIA...129
Trendware TE-16PnP Plug-n-Play Combo ISA...35
Trendware TE-200CT PCMCIA II Combo RJ45...99
Xircom NextGeneration E-net 10/100 Ready ...139
Xircom 10BT/56K Combo...299

VIDEO CAPTURE

AITech Pro PC TV Plus / Wavewatcher TV-2 ...139/268
ATI All-in-Wonder (TV Tuner, Video Capture, & TV set display)...229
Intel SmartVideo III...172
Sigma Reel Magic Ultra MPEG...294

POWER PROTECTION

APC Back-UPS 280B/400B / 450/600...99/145/169/237
APC Back-UPS 900/1250...339/449
APC Back-UPS Pro 280/420/650...140/230/280
APC Smart-UPS 420 VS/ 650 VS / 1000VS ...259/295/435
APC Smart-UPS 450/700/1400/2200.....275/338/594/1029
APC Back-UPS Office 250...169
Tripp Lite BC PER 280/420...94/135
Tripp Lite BC PRO 1050/1400...319/399
Tripp Lite Internet Office 325/450...135/145
Tripp Lite Isobar 4/6/8...36/45/58

SCANNERS

HEWLETT PACKARD
ScanJet 5S / ScanJet 4SI...232/2359
ScanJet 5P/ ScanJet 4C...364/729
ScanJet Office 300dpi Printing, 24-bit Clr Scanning...659

MICROTEK
PageWiz Color (scan fax copy in color)...143
ScanMaker E3 w/Imagestar.....Price Drop!...181
ScanMaker E6 Standard 30bit...319
ScanMaker III 36-bit w/Full Photoshop...1299
Scanmaker V300 300X600 24bit color...199

POLAROID FILM SCANNERS
Sprint Scan 35/LE.....Best Buy!...729

UMAX
PageOffice Color IIC (detachable scanning head)...209
Astra 600P 30bit 300dpi...145
Astra 600S 300dpi 30-bit w/Photodeluxe...168
Astra 1200S 600x1200dpi ($30 Rebate, exp 9/31/97)...329*
Astra 1200S 600x1200dpi w/Adobe Photoshop FULL...589
PowerLook II PS w/Photo... Full...1299

MONITORS

ADI
ProVista 14" SVGA 1024x768 .28mm...179
MicroScan 4V 15" 1280x1024 .28mm...279
MicroScan 5V 17" 1280x1024 .28mm...479
Microscan 17X Pivot 17" 1280X1024 .26mm...769

EIZO
FX-C6 17" 26 1360X1024 / FlexScan TXC7S 17" .81g/989

MAG INNOVISION
DJ530 15" 1280x1024 .28mm...292
DJ707 17" 1280X1024 .26mm...599

MAGNAVOX
7BM749 14" Mono 720x400...109
CM2099 14" 1024x768 .24mm...219
MV5011 15" 1024x768 .24mm (digital)...289
MB7000 17" 1280x1024 .24mm...519
CM5600 20" 1600x1280 .24mm (digital)...989

MITSUBISHI
Diamond Pro 91TXM 21" 1600x1200 .28...1429
Diamond Scan 67bxv 17" 1280x1024 .28...655

NEC
P750 17" 1600x1280 .25mm...839
E1100 21" 1600x1280 .28mm...1399
LCD400 14" Flat LCD Panel 1024x768 TFT...2699

NOKIA
447XAV 17" 1600x1200 .25mm...829
445XI1258 21" 1600x1280 .25mm...1669

PANANSONIC
Panasync S17 17" 1024x768 .27mm...577
Panasync E21 21" 1600x1200 .25mm...1299

SONY
CPD-100SX 15" 1280x1024 .25mm...319
CPD-100SF 15" 1280x1024 .25 (digital)...369
CPD-100VS 15" 1280x1024 w/Speakers...469
CPD-220VS 15" 1280x1024 w/Speakers...809
CPD-200SX 17" 1280x1024 .25mm...585
CPD-200SF 17" 1280x1024 .25mm (digital)...677
GDM-17SE2T 17" 1600x1200 .25mm...829
CPD-300SFT 20" 1280x1024 .30mm TCO...1359
GDM-W900 24" 1920x1200 .25mm...4349

VIEWSONIC
VP140" 14" ViewPanel 1024x768...299
17EA 17" 1280x1024 .28mm w/speakers...589
PT775 17" .25 1600X1280...772

VISIONMASTER by ilYAMA
MT-8617E 17" 1280X1024 .26...575
MT-9017E 17" 1600x1200 .25mm...639
MT-9021E 21" 1600x1200 .28mm...1379

MOTHERBOARDS

Altec Lansing ACS500 5-Channel Dolby Speakers...299
Creative Labs Awe 64 Gold, 4MB...223
Creative Labs Discovery 12X Kit w/SB 32...283
Creative Sound Blaster 16 Value IDE Card...89
Goldstar 16X / SB 64 AWE Gold...85/189
Labtec 3210 20-watt Speakers...62
Sony SRS-PC51 5W / SRS-PC91 10-w...53/128

DRIVES

Altek XGT 12X12 16button 12x18...249 / 429
Wacom Artpad II 4x5 w/ Dabbler / 12x12 cordless...149/409

PLOTTERS

CalcompTecJET Designer 720C 24" Color Inkjet...1899
ENCAD Cromo24 24" 600dpi 300dpi color...1759

MODEMS

Diamond Supraexpress 56K int./ext...139/152
Simple Tech Communicator Simplejack 33.6/56K...165/209

U.S. ROBOTICS
Megahertz XJ4336 33.6 V.34 (cellular capable)...228
Megahertz XJ4288 xJack 28.8 PC Card V.34...229
Courier V.Everything 56K int. ($50 Rebate)*...239
Sportster 33.6 Winmodem Internal ($20 Rebate)*...55*
Sportster 33.6 V.34 int./ext. ($20 Rebate)*...105/122*
Sportster PCMCIA 2.1 28.8 w/fax V.34...199
Sportster Voice x2 56K modem int./ext ($50 Rebate)*...159*/179*
Sportster x2 56K Faxmodem int. ($50 Rebate)*...149*
Sportster x2 56K Faxmodem ext. ($50 Rebate)*...169*

DRIVES

CD-ROM DRIVES
Microsolutions Parallel Port 4X/8X...189/209
Toshiba Internal 15X SCSI-2...169
Panasonic KXL-783A PCMCIA Kit w/sound...369
Plextor 20/12Plex ext/int. SCSI...223/319
Goldstar 24X...119

CD RECORDABLES
HP Surestore 6020 6X2 int./ext...358/4949
Pinnacle Micro RCD226 4x4 int./ext...659/749
Plextor Plexwriter 2x4 int/ext...466/579
Smart & Friendly 4006 PRO 6x4 int./ext...687/799

FLOPPY DISK STORAGE

IOMega Ditto 2G int. / 2G parallel Propak...129 / 168
IOMega Ditto 3.2G int...181
IOMega Zip / JAZ 1.GB int...159/266
Pinnacle Micro Apex Optical 4.6GB...1239
Syquest EZ-Flyer 230 Par /Syjet 1.5GB int...189/359
Seagate 4mm DAT 8GB int/ext...849/949
Seagate Tapestor 3.2G ext. par / 4G ext. SCSI ...189/439
Sony Slor Station 2G (w/Navigator Software)...129*
Sony Nice 5200 int/ext...689/799

HARD/FLOPPY DRIVES
Teac 3.5" Floppy Drive...39
Micropolis 4.5GB Ultra 4345av...759
Quantum Fireball 2.1GB FATA / TM 3200 3.2G ...179/229
Maxtor EIDE 3GB...229
Seagate Hawk ST32151W 2.1GB SCSI-2...489
Western Digital Caviar AC22100 2.1G / 3.1G...199/239

CONTROLLERS

Adaptec AHA-1520B/AHA-1540CP...62/179
Adaptec AHA-2742 SCSI-2 EISA w/Fiop Kit...279
Adaptec AHA-2940UW PCI SCSI-3 Master Kit...281
Boca IDE 2-HDD, 2-FDD IDE002...29
GSI Model 18 Eide / 2C 4-IDE...39/49

VIDEO CARDS

ATI 3D Graphics XPression + PCI TV 2MB...119
Diamond Stealth 3D 2200XL / Monster 3D...79/179
Matrox Millennium 3D PCI 2M/4M...159/197
Matrox Mystique PCI 2M / 4M...114/135

PRINTERS

ALPS/MD-2010 Color / MD-4000 Clr + Scanner...339/537
MD-2300 Masterpiece...629

EPSON
Stylus Color 400 / 600 / 800/1520/3000...225 / 288 / 419/739/1699

FARGO
Primera Pro 600x300 Dye-Sub / Pro Elite...1289/1499

HEWLETT PACKARD
DeskJet 1000CXI, 8ppm, 600dpi...469
DeskJet 820CXI, 8ppm, 600dpi 870CXI...279/379
DeskJet 1600C/DeskJet 1600CM...1299/1899
LaserJet 4V/4MV 16ppm 600dpi,11x17...1759/2539
LaserJet 6LXI 6ppm 600dpi... IN STOCK!...385
LaserJet 5,12ppm 4MB /5M,12ppm 6MB 600dpi...999/1529
LaserJet 5N, 12ppm 600dpi, e-net...1289
LaserJet 5SI/LaserJet 5SI MX 24ppm...2649/3399
LaserJet 6PXI/LJ6MP 8ppm 600dpi PSL2 3M...729/879
Color LaserJet 5, 10ppm 20M 300dpi...3859
Copyjet Color Inkjet...1391

LEXMARK
Jetprinter 2050 5ppm 600dpi Color...199
Jetprinter 7000 color 8 3ppm 1200dpi...389
Optra R+ 12ppm 2MB 1200dpi...992
Optra RN+ 16ppm 4MB 1200dpi...1209
Optra 1650 16ppm 4MB 1200dpi...1119

OKIDATA
Turbo 184/320/321/520/521...225/315/442/379/489
600e/6e/6ex ...New LEDs!...299/CALL/CALL

PANASONIC
KXP-4440, 10ppm parallel...1019
KXP-6100 300dpi / KXP-6500 600dpi...286/329

DMS
Magicolor CX Laser, 20M, 12ppm 600dpi...4999

DESKTOPS

AST
Bravo MS P-166MMX 2G 32M 16X 32M...1619
Bravo LC 6233 Pentium-2 233 2.0G 32M...2216
Bravo 5166M P166MMX 32M 2G 16X...1719
Bravo MS-T, PPro-200, 3.0G 32M 16x Win NT...1649

COMPAQ
Deskpro 4000 P-233MMX, 3.2G 32M Net-flex 8X...2094
Deskpro 4000 Pentium-2 266 2.5G 32M 8X...2499
Deskpro 6000 P-PRO-200 4.2G 32M 6X e-net...2699
Deskpro 6000 Pentium-2 266 4.2G 32M 8X...3129
Deskpro 8000 Series ...Just Released!!...Call

HEWLETT PACKARD
Vectra VL5 DT P-166MMX 16M 2.5G...1399
Vectra VL6 P2-233MMX 2.5G 32M NTV4.0...2159
Vectra 525 MCX MT P-166MMX 24M 2.5G 16X...1989
Vectra 525 MCX MT P-200MMX 32M 3.8G 16X...2284

IBM
PC350 P166MMX 2.5G 16M...1729
PC330 P200MMX 2.5G 32M...1819
PC300XL Pentium-2 233 2.5G 32M 16X NT...2299

SERVERS

AST Servers
Manhatten D, P-200 4G 32M...3279
Manhatten CP PP200 64M 10BT 2G 4X...6796

COMPAQ Servers
Proliant 6000 6/200 128M...11799
Proliant 2500 P Pro200 4.3G 32M...4799

HEWLETT PACKARD Servers
Netserver E-40 PP-180 2.1G 16M 8X...2596
Proserva SH PP200 NoHD 128M 4X...8599

IBM Servers
PC Server PPro200 128M NoHD 4X...1299
PC Server 720 P-166 128M NoHD 4X...11,999

Compaq Presario 2200 P166 1 6GB 16MB 8X 33.6...CALL
Presario 4808 P200MMX 32M 4.3G 24X 56K...1899
Presario 4814 P233MMX 32M 6.5G 24X 56K ZIP100...2359

SONY
Vaio PCV-100 P166MMX, 2.5G 32M, 28.8 16xCD...1579
Vaio PCV-120 P200MMX, 3.8G 32M, 28.8 16xCD...1849
Vaio PCV-130 P200MMX 4 3G Zip100 32M 24X 56K 2059
Vaio-PCV-150 P233MMX 4 3G ZIP100 32M 24X 56K...2239

TOSHIBA
Equium 5200D P200MMX 2.5G 12X 32M...1849
Equium 6200M PP-200 4 3G 32M 12X WIN NT...3089

Where Corporate America Shops!

Easy Payment Methods!
• Leasing Available • Purchase orders accepted from educational institutions, federal & state agencies and approved corporations. • C.O.D's welcome.

Office Hours Monday-Friday 8am-7pm CST
24-HOUR FAX 847-367-8540
International Line 847-367-6519

VISA MasterCard DISCOVER

Policy Information
• No surcharge for credit cards • All prices subject to change • Orders outside the USA require payment by wire transfer or American Express • We check for stolen credit cards • All returns for credit, repair or exchange must have a "RA" number issued by our customer service department • Returned merchandise may depend on "manufacturer policy" • Returned merchandise must in good condition and shipped to our main warehouse located at: 800 Bunker Court, Vernon Hills, IL 60061

800-65-WORKS
9 6 7 5 7

VISIT US ON THE WEB! http://www.mcworks.com

PC World Oct. 1997

Circle 155 on reader service card

Blowout Prices on Leading Products!

MicroWAR

YOUR SOURCE FOR PC SOFTWARE,

IOMEGA ZIP DRIVE

Includes Disk!

ONLY $149.95!

DR4602: Parallel
DRI1050: SCSI
DR5279: Insider

iomega

New! HP LaserJet 5simx Printer

HEWLETT PACKARD

- 24ppm w/40MHz Risc Processor
- 100K Page Monthly Duty Cycle

PR12434

ONLY $3529.95

MAGNAVOX Magnavox 20" Monitor

As low as $699.95!

- 1280 x 1024 resolution

MT0878

IBM ThinkPad 380

As Low As $1749!

CP4775

150MHZ PENTIUM® PROCESSOR/16MB/ 1.08GB HDD/12.1" SVGA DSTN DISPLAY.

IBM

Extensa 610CD

- 150MHz Pentium® processor
- 1.4GB Hard Disk drive
- 16MB RAM EDO RAM
- 10X CD-ROM drive
- 11.3" SVGA DSTN color display

CP4934

only $1799

Acer

Texas Instruments

Presario 4504

200MHz Pentium® processor, 2.1GB, 16MB RAM, 16X CD-ROM, Easy access buttons!

NEW!

FOR ONLY $999!

CP5379

COMPAQ

Monitor sold seperately.

2.0GB HARD DRIVE KIT

Maxtor

FOR ONLY $179.95*

DR6643

*Price reflects $30 manufacturer's mail-in rebate. Rebate expires 10/31/97. Ask for rebate certificate AA0818

COMPAQ DESKPRO 4000

- 233MHz Pentium® II processor
- 2.5GB hard drive
- 32MB RAM
- 8X CD-ROM
- 5 slots, 4 bays

CP5023

Only $2319!

Includes Network Interface Card. Monitor sold separately.

HEWLETT PACKARD LASERJET 5SE

ONLY $1049.95

PR12268

- 12 pages per minute
- 600 x 600dpi
- 4MB of memory expandable to 66MB

HEWLETT PACKARD 200MHz PENTIUM® MMX PROCESSOR!

ONLY $1499!*

RCP4849

Monitor sold separately.

- 200MHz Pentium® processor with MMX
- 3.8GB hard drive
- 32MB EDO RAM
- 16X CD-ROM
- Windows 95
- 33.6 modem

Intel inside pentium

Refurbished by the manufacturer to meet original factory specifications. While supplies last

NEW! COMPAQ DESKPRO 2000

- 166MHz Pentium® MMX
- 2.1GB hard drive
- 16MB RAM
- 5 slots, 5 bays desktop

CP5248

$1199!

Monitor sold separately.

COMPAQ DeskPro 2000

Affordable and Manageable Desktop PC's

CP3378: 133MHz Pentium® 16MB, 1.2 GB, DT $979
CP5248: 166MHz Pentium® MMX 16MB 2.1GB HDD, DT $1199
CP5252: 200MHz Pentium® MMX 16MB 2.1GB HDD, DT $1389

Desk Pro 4000

Best Value for Network Environments

CP5259: 166MHz Pentium® MMX 16MB 2.4 GB HDD, DT $1399
CP5256: 200MHz Pentium® MMX 32MB 2.4GB HDD, DT $1679
CP5253: 233MHz Pentium® MMX 32MB 3.2GB HDD 16X CD-ROM, MT $2129

Desk Pro 6000

High Performance Network PC's

CP5022: 233MHz Pentium® II 32MB 2.1 GB SCSI HDD PDCD Drive, DT $2629*
CP5024: 266MHz Pentium® II 32MB 4.2GB SCSI HDD BX CD-ROM, DT $3179*

*While supplies last!

IBM Thinkpads

CP4775: 3B0, 150MHz Pentium®, 1.08GB, 16MB RAM, 12.1" DSTN $1749
CP4773: 3B0D, 150MHz Pentium®, 1.35GB, 16MB, 8X CD-ROM, 12.1" DSTN $1999
CP4774: 380D, 150MHz MMX Pentium®, 2.1GB, 16MB, BX CD-ROM, 12.1" TFT $3299
CP2907: 760EL, 120MHz Pentium®, 1.08GB, BMB/72MB, 12.1" SVGA TFT $3199*
CP3558: 760E, 150MHz Pentium®, 2.1GB, 16MB/104MB, 12.1" XGA TFT $3499
CP3557: 760EL, 133MHz Pentium®, 2.1GB, 16MB/80MB, 12.1" SVGA TFT $3829
CP3559: 760ED, 133MHz Pentium®, 2.1GB, 16MB/104MB, 12.1" XGA TFT, 6X CD-ROM $3699
CP4434: 760XL, 166MMX Pentium®, 2.1GB, 16MB, 12.1" TFT $3829
CP4433: 760XL, 166MMX Pentium®, 2.1GB, 32MB, 12.1" TFT, WIN-NT $3999
CP4435: 760XD, 166MMX Pentium®, 3GB, 32MB, BX CD, 12.1" XGA TFT $4789

*While supplies last!

TOSHIBA Toshiba Laptops

CP5166: 220CDS, 133MHz Pentium®, 1.34GB HDD, 16MB RAM, 10X CD-ROM, 12.1" SVGA DSTN $1949
CP5205: 50CT, 75MHz Pentium®, 772MB, 6.1 TFT, 1.8lbs. $1949
CP5204: 300CT, 133MHz MMX, Pentium® 1.51GB HDD, 33.6 Kbps, 10.4" TFT $3399
CP5209: 440CDX, 133MHz MMX Pentium®, 1.34GB HDD, 10X CD, 12.1 FAST SCAN™ $2399
CP5210: 440CDT, 133MHz MMX Pentium®, 1.34GB, HDD,12.1" TFT, 10X CD $3299
CP5208: 460CDT, 166MHz MMX Pentium®, 2.02GB HDD, 10X CD, 33.6 Kbps, 12.1" TFT $3799
CP3217: 500CDT, 120MHz, 1.2GB HDD,12.1" SVGA TFT, 6X CD $2399
CP5206: 520CDT, 166MHz, 2.1GB HDD, 33.6, 12.1" TFT, 10X CD $4299
CP5207: 530CDT, 166MHz MMX Pentium®, 2.1GB HDD, 33.6, 12.1" TFT, 10X CD $4699

*While supplies last!

HP LASERJET 6LSE PRINTER

FOR ONLY $399.95!

PR12310

- Prints up to 6ppm
- 600 x 600dpi
- HP's Resolution Enhancement technology for smoother grays and sharper blacks

HEWLETT PACKARD

FROM $259 UPGRADE TO THE LATEST VERSION OF NOVELL'S NetWare IntraNetWare!

Novell's new IntraNetWare combines the evolution of NetWare, the world's leading network operating system, into a full-service intranet and Internet access platform for businesses of all sizes.

Novell

OCS3234

1440dpi Printing!

EPSON

STYLUS 600 $299.95!

- 6ppm
- 1,440 x 720dpi output

PR12126

Microsoft Office 97 Standard Upgrade!

Includes Word, Excel, PowerPoint, and Outlook.

UPGRADE $179.95!*

SI2442

*Price after Microsoft $40 rebate for version upgrades. Price before rebate is $309.95.

Microsoft Office 97

Microsoft

- Visa and MasterCard accepted. Your credit card will not be charged until your order is shipped.
- Purchase orders subject to credit approval.
- All products covered by 30-day limited warranty. Defective software replaced immediately. Hardware replaced or repaired at our discretion.
- Connecticut, New Jersey, Illinois, Ohio, and Washington residents add applicable sales tax.
- Orders for in-stock items placed by 12:00 midnight (E) weekdays, (barring system failure, etc.) ship overnight by Airborne Express. (Some areas require an extra day).
- We reserve the right to limit quantities.
- Shipping charge $9.95 per order up to 7 lbs. $1.25 per lb. above 7 lbs.
- UPS ground service also available at current UPS rates plus $2.95 handling charge per order except COD. UPS orders placed by 3:00 p.m. (E) weekdays, ship same day.
- Actual freight charges apply for computers, hard disks, Bernoulli's, tape backups, monitors, and printers.
- Alaska, Hawaii, outside continental U.S., APO/FPO call for information.
- Item availability and price subject to change without notice.
- Some products not available outside U.S. Please call for more information.
- Not responsible for errors or omissions.

EHOUSE

HARDWARE AND PERIPHERALS

FREE! JAVA TUTORIAL

*You pay only $2.95 shipping & handling. Shipped in promotional packaging. While supplies last. Ask for item #AAA0496.

COMPAQ ARMADA 4110

- 100MHz Pentium® Processor
- 8MB RAM
- 810MB Removable Hard Drive
- Windows 95
- 11.3" SVGA DSTN Color Display
- 16-Bit Stereo Sound
- Lithium Ion Battery
- 3 Year Warranty

Ask For Item # CP3226

ONLY $999
WHILE SUPPLIES LAST!
QUANTITIES LIMITED TO 10 PER CUSTOMER

VISIONBOOK PLUS 4140

New! ONLY $1799

- 133MHz Pentium® Processor
- 1.4GB HDD
- 16MB RAM
- 12.1" HA-STN display
- 10X CD-ROM
- 33.6 Kbps Modem

HITACHI CP5239

IBM THINKPAD 765D

IBM New! ONLY $6699

- 166MHz MMX Pentium® Processor
- 32MB RAM
- 3GB Hard Drive
- 256KB Cache
- 13.3" XGA TFT color display
- 8X CD-ROM

Intel Inside

CP5040

TOSHIBA SATELLITE 220CDS

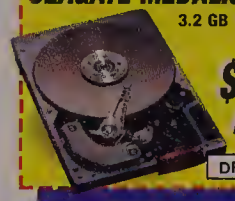
ONLY $1949

- 133MHz Pentium® processor
- 1.34GB hard disk drive
- 16MB EDO RAM
- 10X CD-ROM drive
- 12.1" SVGA DSTN display

CP5166 TOSHIBA

SEAGATE MEDALIST™

SEAGATE



3.2 GB IDE HARD DRIVE
ONLY $249.95!
DR6333 Seagate

IOMEGA JAZ DRIVE

IOMEGA

INCLUDES DISK!

INTERNAL DRIVE ONLY
$299.95!
DR4840
EXTERNAL SHOWN, ONLY $399.95.
ASK FOR ITEM # DRI 1119

HEWLETT PACKARD DESKJET 855CXi PRINTER

HEWLETT PACKARD

ONLY $289.95*
BLOWOUT!

- PC/Mac Compatible
- Up to 7ppm black
- 600dpi black

PR12411
*While supplies last.

LS-120 Diskette Drive from O.R. Technology

O.R. TECHNOLOGY

ONLY $99.95!*
BN4343
*Price reflects $50 mail-in rebate direct from Imation. Price before rebate is $149.95. Rebate expires 9/30/97.

SPORTSTER 56K MODEM

US ROBOTICS

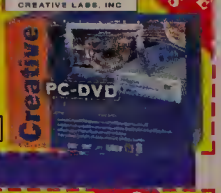
INTERNAL FOR ONLY
$147.99*
BND2130
U.S. Robotics 56Kbps modem
External $167.99 BND2131
EXTERNAL SHOWN.
*After $50 Mail-In rebate. Valid 7/1/97-10/4/97

CREATIVE PC-DVD

CREATIVE LABS

- Watch theater-style video
- Retrieve up to 7 times more data than standard CD-ROM!
- Includes MPEG card!
- Listen to hi-fi audio

CREATIVE CREATIVE LABS, INC.



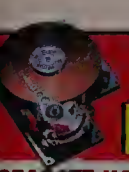
$499.99!
DR6307

D-200L DIGITAL CAMERA

OLYMPUS

OLYMPUS IMAGE SYSTEMS, INC.
ONLY $599!
INP0979

Storage Warehouse



IDE Hard Drives Starting at $179.95

SEAGATE HARD DRIVES (IDE)

DR5652: ST31276A, 1275MB $179.95
DR5767: ST32132A, 2113MB $199.95
DR5655: ST52520A, 2560MB $219.95
DR6333: ST33240A, 3240MB $249.95
DR6331: ST36450A, 6450MB $479.95

WESTERN DIGITAL HARD DRIVES (IDE)

DR6112: Caviar 11200, 1.2GB $179.95
DR5594: Caviar 21600, 1.6GB $189.95
DR5595: Caviar 22100, 2.1GB $209.95
DR5359: Caviar 33100, 3.1GB $259.95
DR5972: Caviar 34000, 4.0GB $339.95

IBM HARD DRIVES (IDE)

DR5732: Deskstar, 2.1GB $239.95
DR5731: Deskstar, 3.24GB $279.95

QUANTUM HARD DRIVES (IDE)

DR6544: Fireball ST 31620ST, 1.6GB $219.95
DR6543: Fireball ST 32160ST, 2.1GB $239.95
DR6542: Fireball ST 33240ST, 3.2GB $299.95
DR6541: Fireball ST 34320ST, 4.3GB $369.95
DR6524: Fireball ST 36480ST, 6.4GB $669.95

MAXTOR HARD DRIVES (IDE)

DR6069: Maxtor KD182500A, 2.5GB $199.95*
DR5661: Maxtor KO183500A, 3.5GB $249.95*
DR6390: Maxtor KD184300A, 4.3GB $299.95*
DR5880: Maxtor KO185120A, 5.1GB $349.95*
DR6557: Maxtor KD187000A, 7.0GB $449.95*
*Price reflects $30 manufacturer's mail-in rebate direct from Maxtor. Ask for rebate certificate AA0818. Rebate expires 10/31/97.

MICROPOLIS HARD DRIVES (SCSI)

DR6091: 4345NS, 4.55GB $769.95
DR6089: 4345WS, 4.55GB $799.95
DR6088: 3391NS, 9.1GB $1299.95
DR6093: 3391WS, 9.1GB $1299.95

QUANTUM HARD DRIVES (SCSI)

DR6527: Fireball ST 32160ST, 2.1GB $319.95
DR6526: Fireball ST 33240ST, 3.2GB $399.95
DR6523: Fireball ST 3420ST, 4.3GB $529.95
DR6524: Fireball ST 36480ST, 6.4GB $669.95

SEAGATE HARD DRIVES (SCSI)

DR6719: ST32272N, 2.26GB $549.95
DR6589: ST32272W, 2.26GB $629.95
DR5639: ST34371N, 4.35GB $749.95
DR5636: ST34371W, 4.35GB $799.95
DR5641: ST19171N, 9.1GB $1329.95
DR5637: ST19171W, 9.1GB $1399.95

WESTERN DIGITAL HARD DRIVES(SCSI)

DR6103: W/D Enterprise 2.17GB $499.95
DR6106: W/D Enterprise 4.36GB $759.95

IOMEGA DITTO TAPE DRIVES

DR5402: Ditto 2GB Int., 2GB $119.95
DR5401: Ditto 2GB Ext., 2GB $169.95

IOMEGA JAZ DRIVE

DR4840: Internal, 1GB $299.95
DRI1119: External, 1GB $399.95
ME6478: 1.0GB Jaz Disk $124.95*
*Quantity pricing available.

IOMEGA ZIP DRIVE

DR4602: Parallel Port $149.95
DRI1050: SCSI $149.95
DR5279: Insider SCSI $149.95
ME6387: 100MB Diskette $17.95

PINNACLE MICRO CD-R DRIVES

DR5513: RCD 4x4 Internal $739.00
DR5512: RCD 4x4 External $839.00

HP/COLORADO TAPE DRIVES

DR5623: T3000 Int., 8GB $169.95
DR5624: T4000ES Ext., 8GB $479.95

SEAGATE TAPE DRIVES

DR4709: TapeStor 800 Int., 800MB $99.95**
DR5707: TapeStor 800 Ext., 800MB $129.95
DR4769: TapeStor 3200 Int., 3200MB $179.95**
DR5708: TapeStor 3200 Ext., 3200MB $199.95
DR5180: TapeStor 8000 Int. SCSI, 8GB $369.95**
DR5182: TapeStor 8000 Ext. SCSI, 8GB $459.95**
DR5181: TapeStor 8000 Int. IDE, 8GB $369.95**
**Includes cartridge.

Free Catalog Subscription

Check the appropriate box(es) to receive a free, one-year subscription and mail this coupon to:
1720 Oak Street, P.O. Box 3014, Lakewood, N.J. 08701-3014

Name:
Address: E-Mail:
City: State: Zip:

○ MicroWAREHOUSE ○ MicroSYSTEMS WAREHOUSE
○ MacWAREHOUSE ○ Data Comm™ WAREHOUSE

(Expect to receive your next issue within 4-6 weeks).

©Copyright 1997 MicroWarehouse, Inc. MacWAREHOUSE® is a division of MicroWarehouse, Inc. MacWAREHOUSE® and MicroWarehouse® are registered servicemarks of MicroWarehouse, Inc.

PPW7

Get it Overnight — Order it today and use it tomorrow!

To order, call toll-free 24 hours a day, 7 days a week

1-800-793-4960

On the Internet: www.warehouse.com

Fax: 908-905-5245

Order until 12:00 midnight (E) weekdays for overnight delivery of "in stock" items — only $9.95!*

*Shipping charge $9.95 per order up to 7 lbs., $1.25 per lb. over 7lbs.

CALL FOR A FREE CATALOG!

Bar Code Solutions

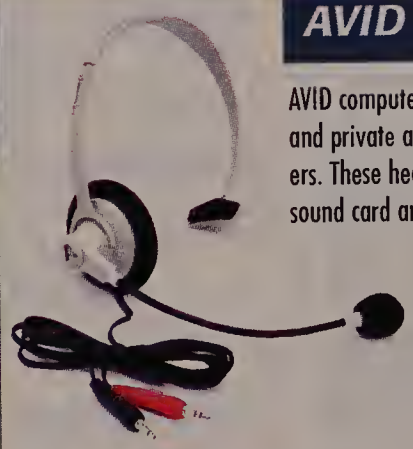
Videx data collection equipment is designed for work on the go. Cast-metal cases protect the products and allow them to work reliably in harsh environments.

Videx Products...Built Tough...Built to Last!

Videx
1105 N.E. Circle Blvd., Corvallis, OR 97330
541-758-0521 • Fax 541-752-5285 • http://www.videx.com

CIRCLE 480 ON READER SERVICE CARD

AVID Computer Headsets



AVID computer headsets are an affordable, lightweight and private alternative to PC microphones and speakers. These headsets plug right into your computer's sound card and are ideal for:

- Computer Telephony Integration (CTI)
- Voice/Speech Recognition
- Personal Conferencing
- Internet Telephony
- Multimedia Applications

Only $24.95 – Dealers welcome

VISA, AMEX & MASTERCARD

Ahern Communications Corp.
1-800-451-5071

www.aherncorp.com

CIRCLE 484 ON READER SERVICE CARD

Keep your PCs up & running with the 100% accurate fix...

1993 BYTE Bournelle's User's Choice Award
PC UPGRADE Utility of the Month
Service News Product of the Month
Windows 95 Compatible
GSA Approved

Micro-Scope is a universal PC diagnostic that runs a proprietary O/S which eliminates DOS limitations and inaccuracies. Version 6.16 adds 25 enhancements and includes: IDE low-level format, accurate IRQ conflict display, cache memory test, 64 meg video memory test, data recovery capabilities, virus capabilities and super-fast hard drive testing.

Post-Probe is a universal P.O.S.T. (Power-On Self-Test) reader card for the "dead" PC. Post-Probe includes: MCA adapter, tri-state logic probe, 13 LED pre-POST test, 2-digit POST code display and a manual with a full explanation of the manufacturer POST codes down to the exact device or chip failure.

Micro 2000, Inc.
1100 E. Broadway, 3rd Floor
Glendale, CA 91205
Toll Free 1 (800) 864-8008
Fax (818) 547-0397
http://www.micro2000.com

Award Winning

Professional Diagnostics from MICRO 2000™

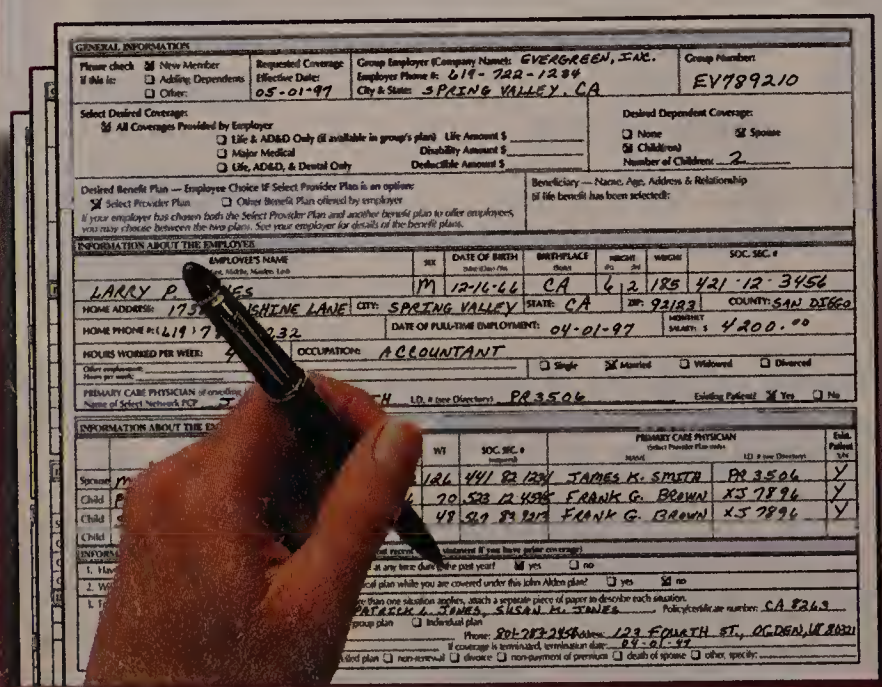
CIRCLE 457 ON READER SERVICE CARD

SURVEYS • SALES ORDERS • TIME CARDS • REGISTRATIONS • INSURANCE CLAIMS • PATIENT HISTORY • CREDIT APPLICATIONS

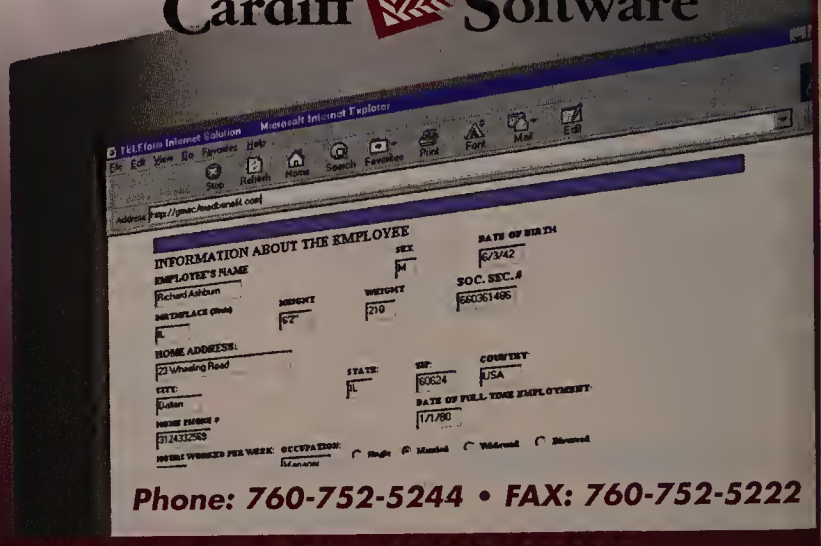
AUTOMATED DATA ENTRY
Any Form...Every Format!

If your company enters information into a database, you need **TELE***form*, the data collection solution. **TELE***form* reads hand print from any form. It reads any data type from faxed, scanned, or even Internet-based forms. The **TELE***form* family of products can handle your forms processing needs, whether its a hundred or tens of thousands of forms each day. Create a form, print it, fax it, post it on your Web site. One form in any format, paper or electronic. Thousands of companies use **TELE***form's* data collection server and robust recognition capabilities to reduce their dependence on manual data entry.

Find out more about TELE*form*, your Total Data Collection Solution.
Toll Free
888.254.8915
www.cardiffsw.com



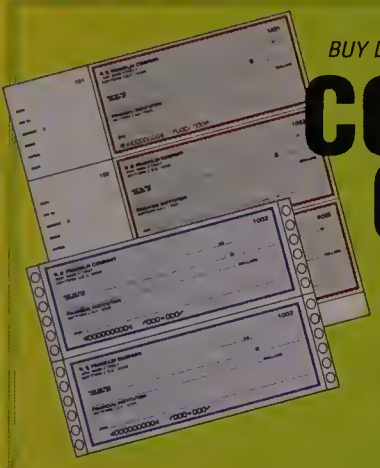
Cardiff Software



Phone: 760-752-5244 • FAX: 760-752-5222

EMPLOYMENT APPLICATIONS • TESTS AND EVALUATIONS • WARRANTY CARDS • READER RESPONSE

CIRCLE 440 ON READER SERVICE CARD



BUY DESIGNER DIRECT FOR LOWEST PRICES!

COMPUTER CHECKS

AS LOW AS

$29.95

Plus One **FREE** "Check Saver" With Every Order
(For Partial Check Sheets or Aligning Continuous Feed Checks)

www.hotnew.com/checks
CALL: 1-800-239-4087
FAX ORDERS: 1-800-774-1118 (PLEASE CALL FOR A FAX ORDER FORM)
E-MAIL: INFO@CHECKS.HOTNEW.COM
MC, VISA & AMERICAN EXPRESS ACCEPTED

LASER AND CONTINUOUS FEED CHECKS AVAILABLE IN:
- BUSINESS SIZE
- BUSINESS SIZE WITH VOUCHER
- WALLET SIZE

Available in Quantities of 250, 500, 1000 and 2000. Choose From 4 Stylish Colors!

Classic Green · Prestige · Tan · Classic Blue

QUICKEN
SIMPLY MONEY
MICROSOFT MONEY
MANAGING YOUR MONEY
QUICKBOOKS
& MANY MORE

Designer™ CHECKS
P.O. Box 9100 • Anniston • AL 36202-9100

P05P04C6 • PC WORLD

CIRCLE 474 ON READER SERVICE CARD

NO MORE pre-printed checks!

Save time and money printing your own checks with mips VersaCheck™!

300 Additional Blank Checks **FREE** mail-in coupon inside packages!

Revolutionary mips VersaCheck™ is the inexpensive software that not only lets you print your own completely valid checks from scratch, but automatically keeps your account balances too! mips VersaCheck installs into MS Word 6, 7 & 97 and lets you create checks in minutes. Include addresses, logos, even your signature, all password protected. **mips VersaCheck even prints the bank code line required by all banks for processing.** And, you can make changes to your checks at any time, instantly!

- ✔ **Save 50-80%** over pre-printed checks!
- ✔ Prints bank drafts and deposit slips
- ✔ Manage an unlimited number of password-protected accounts
- ✔ Compatible with inkjets and laser printers
- ✔ Compatible with **Quicken**, **QuickBooks**, **PeachTree** and more!

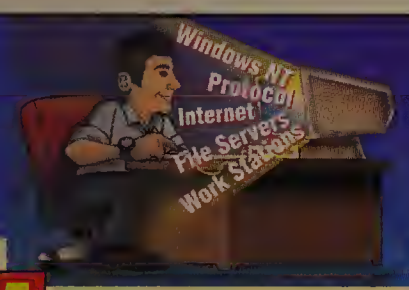
mipsVersaCheck™ SRP $49.95

To order, call 800-898-8560

mips Dataline America, Inc.
Tel: 619-679-4070 · Fax: 619-679-4073 · http://www.mipsdla.com
13240 Evening Creek Drive, Suite 311 · San Diego, CA 92128

Also available through:
OfficeMax 800-788-8080
Tiger Direct 800-888-4437
EGGHEAD 800-EGGHEAD
COMPUSA 800-COMPUSA
800-258-2088
COMPUTER CITY 800-843-2489

CIRCLE 517 ON READER SERVICE CARD



GET MCSE, CNE OR A+ CERTIFIED... FAST!

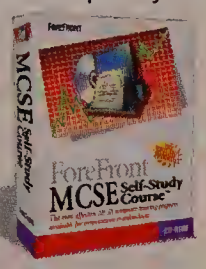
The first *100%* Computer Based Training (CBT) programs on CD-ROM to fully prepare you for Novell's CNE, Microsoft's MCSE and the A+ Certification exams. ForeFront's Self-Study Courses give you flexibility and portability unmatched by traditional training methods. You'll study at your own pace using our easy to follow, step-by-step format. Study whenever and wherever it's convenient for you!

- **All on one CD**
- **Interactive simulations for hands-on exercises**
- **Study at your own pace**
- **Hundreds of practice questions**
- **Priced below competitive products**
- **Everything you need to prepare for the exams!**

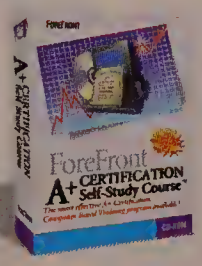
Bonus!!!
Buy Any Two CBTs at the regular price and get The Micro House Technical Library™ FREE

The ForeFront MCSE Self-Study Course™

Ensures the highest rate of retention so that when you complete your training you'll be fully prepared to pass your MCSE exams. You'll be ready and confident to go into the workplace to effectively plan, implement, maintain and support information systems in a wide range of computing environments, using Windows NT and other Microsoft Server products.



The ForeFront A+ CERTIFICATION Self-Study Course™



Getting A+ Certified will help open the way to further advancement in the corporate world. A+ Certification is the new required standard for PC Repair Technicians. This hands-on self-study course will give you all the technical material, knowledge, interactive exercises, and confidence you'll need to pass your exams and excel in today's competitive PC repair marketplace!

The ForeFront CNE Self-Study Course™

Provides fast, effective and convenient training to anyone wishing to become a Certified NetWare Engineer, even when hampered by a busy schedule. Our CNE CBT allows you to learn *everything* you'll need for full NetWare certification.

Call for Special Discount Pricing Today!

1-800-475-5831

(813) 724-8994 • FAX (813) 726-6922 PC
25400 U.S. Hwy. 19 N., #285 Clearwater, FL 33763

MasterCard · VISA · AMERICAN EXPRESS · DISCOVER/NOVUS

- Free Technical Support
- Next Day Shipping
- Performance Guaranteed

FOREFRONT™ DIRECT

CIRCLE 477 ON READER SERVICE CARD

Replace Your Cash Register

PCW 10/97

MicroBiz AUTOMATE YOUR BUSINESS™

The worlds best selling Point-of-Sale solution that gives you more money, more control and more flexibility.

See for yourself how effectively MicroBiz software can manage your retail business

- ✓ Accurate Inventory Control
- ✓ Defined Customer Tracking
- ✓ Complete Invoicing
- ✓ xBase File Structure
- ✓ Multiple Language Support
- ✓ Bar Code Reader
- ✓ Receipt Printer
- ✓ Cash Drawer
- ✓ Other Point-of-Sale Hardware

Special Versions For:

- ✓ Auto Repair
- ✓ Dry Cleaning
- ✓ Video Tape Rental
- ✓ Liquor Store
- ✓ Hair Salon
- ✓ All Retail & Service Businesses

"Easiest to use"
...Computer Reseller News

"The most complete POS solution of any software reviewed."
...CPA Software News

FROM $695.00

MicroBiz offers the easiest to use Point-of-Sale software solutions for retail and service businesses. Over 100,000 Businesses have automated with our software. Our software is powerful, flexible and uses industry standard xbase files, so you can create your own reports. Our data can be merged with Excel, Word, and other industry standard products. Call for a demonstration copy of our software or download it from the web. Single or Multi-user or multi-store solutions.

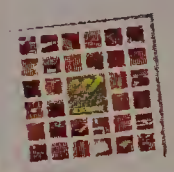
Call for our ***FREE*** catalog... **800-929-8324**

777 Corporate Drive ◆ Mahwah, NJ 07430
Phone: 201-512-0900 FAX: 201-512-1919
Visit our home page at: www.microbiz.com

CIRCLE 403 ON READER SERVICE CARD

A Place For Everything. And Everything In It's Place.

Visit Us Online or Call Us for Your Free Catalog!



Computer Furniture Direct will help you put everything in it's place. Create the ultimate personalized work space with sturdy, real wood furniture. We deliver and set up in your home or office. Enjoy factory direct savings on over 25 different desks priced delivered from $419.
Call us at 904.565.1163

cf-direct.com
Please Refer to Ad Code PCW1097

Delivered Direct to Your Home or Office!

COMPUTER FURNITURE DIRECT

CIRCLE 423 ON READER SERVICE CARD

Add COLORFUL Music To Your Desktop

You already have the music within you. Edirol can help you ***express*** it through the PC or Mac you already own!

Enjoy new levels of music with a Sound Canvas, made by Roland, leaders in quality sound for 25 years.

For more information on the new Edirol **SC-88Pro** (made by Roland) and our complete line of computer music products, call or visit us on-line today to request your free buyer's guide.

- ▶ **Download software demos and enter our sweepstakes at http://www.edirol.com**
- ▶ **Call 1-800-380-2580 to request your free Edirol computer music buyer's guide**

EDIROL
Member of the Roland Group

808 Harrison Ave.
P.O. Box 4919
Blaine, WA 98231-4919

CIRCLE 489 ON READER SERVICE CARD

The Power to be Efficient

AMERICAN MICROSYSTEMS, LTD

800 648 4452

FAX 817 685 6232 • WWW.AMLTD.COM
2190 Regal Parkway • Euless, Texas 76040

Call Now for a Free Catalog!

Lifetime toll-free support • 13 years in business
Thorough quality control
Same-day shipping • Made in the USA

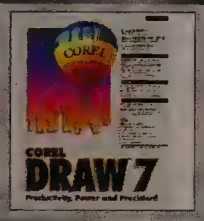
SPECIAL DEALER PRICING AVAILABLE!
WE ALSO OFFER SPECIAL VOLUME PRICING. CALL FOR DETAILS

Student - Teacher & School Discounts!

LATEST VERSIONS & FULL PACKAGES

Painter 5.0 $209

3-D MAX Apprentice $349



CorelDRAW 7.0 $169

3D AcuWorlds	$159
3D Studio Release 4.0	$495
Antique Maps Of World Vol 1 or 2	$149
Astound 4.0.1	$99
Authorware 4.0	$749
AutoCAD LT 3.0	$329
Bitstream Collection	$129
Boris Effects Pro 2.2	$199
Borland C++ 5.0.2	$59
Borland C++Builder 1.0 Pro	$99
Cakewalk Pro Audio Deluxe 6.0	$319
Canvas 5.0	$179
Character Studio	$275
ClarisWorks 4.0 Internet Edition	$89
Close-Up 6.5	$89
Coda Finale 3.7	$249
Corel Click & Create 1.01	$149
Corel Ventura 7.0	$149
Cubase 3.0	$199
DeBabelizer Pro	$319
DeltaGraph 4.0	$89
Dramatica Pro 2.0	$199
EndNote Plus 2.1	$165
Epson Stylus 800 InkJet Printer	$419
Eye Candy 3.01	$79
FastTrack Schedule 4.01	$129
FileMaker Pro 3.0	$129
Final Draft 4.1	$125
Flash 2.0	$149
Flo' 2.0.4	$69
Form Z 2.9	CALL
Fractal 3D Suite	$199
Fractal Expression 1.0	$99
Fractal Poser 2.0	$79
HyperStudio 3.0	$119
Illuminaire Paint	$749
Inspiration 5.0	$79
Iomega Zip100 Ext Drive	$149
Jamba 1.1	$125
Jmp 3.2	$329
KPT Bryce 2.0	$119
Kai's Power Tools 3.0	$85
Kodak DC50 Digital Camera	$649
LightWave 3D 5.0	CALL
Lotus 1-2-3 97	$69
M.Y.O.B 7.0	$49
Mathematica 3.0 Student	$149
MiniCAD 7.0	$319
NetObjects Fusion 2.0	$199
OS/2 Warp 4.0	$99
OmniPage Pro 7.0	$329
PC MACLAN 6.0.1	$129
Photo/Graphic Edges Vol 1,2 or 3...	CALL
PhotoTools 1.1	$69
PosterWorks 4.0	$249
ProComm Plus 4.0	$99
QuickView Plus 4.0	$39
Screen Caffeine Pro	$75
SigmaPlot 4.0	$349
SmartSuite 97	$99
Sportster 56K Ext	$209
Squizz! 2.0	$69
StoryBoard Artist 1.5	$329
Terra Forma Regional Vol 1,2, or 3.	$119
Turbo C++ 4.5	$49
Umax Astra 600S Scanner	$239
VirusScan 3.0	$49
Visio 4.0	$99
Visual Objects Pro 2.0	$169
Wacom Art Z II 12x12 Serial Tablet	$399
Wacom Art Z II 6x8 Serial Tablet ...	$285
Webtricity	$119
Win Academy Tutorial Videos	$35
WordPerfect Suite 7.0	$79

Director 6 Multimedia Studio $649

FreeHand Studio 7.0 $199

Delphi 3.0 Pro $119

*SAME DAY SHIPPING ON MOST ITEMS.
*SCHOOL PURCHASE ORDERS WELCOME.
*NO SURCHARGE ON CREDIT CARDS.
*IBM & MAC PRODUCTS AVAILABLE.
*ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS AND SCHOOLS.

PHONE
(800) 289-3275
**Prices and Availability Subject to Change
**Free AOL Starter Kit While Supplies Last

CALL FOR FREE CATALOG!!
(800)289-3275
INCLUDES COMPLETE PRICE LIST & FREE PRODUCT LITERATURE

The SOFTWARE Source

WE WILL BEAT ANY ADVERTISED PRICE !

THE SOFTWARE SOURCE CO, INC.
1750 Brielle Ave, Unit A-2, Ocean NJ 07712
Phone (908) 695-2100 Fax (908) 695-9371

VISA MasterCard DISCOVER

CIRCLE 473 ON READER SERVICE CARD

HOW FAST DO THESE NOTEBOOKS AND DESKTOPS GO? IT DEPENDS ON HOW FAST YOU DIAL.

To request a fax of weekly specials, call 800 950-1329 and enter document number 10010.

Forget everything you know about factory outlets. Well, almost everything. That's because at Dell Factory Outlet, you won't find damaged computers at skimpy markdowns.

And you won't find out-of-date technology. What you will find at Dell Factory Outlet are the award-winning lines of Dell computer systems, completely refurbished and tested to meet our high standard of quality. Like notebooks featuring cutting-edge multimedia capabilities. And desktop systems featuring 266MHz Pentium® II processors. But here's the really big news. You can get all of this at incredible savings across the board.

Values so big, we call them **GIGABUYS!** Inventories are limited to quantities in stock, and change regularly. So call us today. Don't miss out on your **GIGABUYS!**

REFURBISHED DELL LATITUDE™ NOTEBOOKS
166MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY
STARTING AT **$2999**
Active Matrix Display

REFURBISHED DELL DIMENSION™ XPS DESKTOPS
266MHz PENTIUM® II PROCESSOR
STARTING AT **$1749**
Monitor Sold Separately

REFURBISHED DELL OPTIPLEX™ DESKTOPS
200MHz PENTIUM® PRO PROCESSOR
STARTING AT **$1499**
Monitor Sold Separately

DELL®
get a GIGABUY!®
TO ORDER, CALL TOLL FREE
1-800-370-5307
M-F 7AM-8PM, SAT. 9AM-6PM CDT

MMX™ intel inside pentium® II PROCESSOR

The Dell Factory Outlet sells only refurbished computers. For pricing on new Dell computers, call (800) 284-0008.

Available configurations may vary. For a copy of our limited warranties, please write to Dell Factory Outlet, 8801 Research Blvd., Austin, TX 78758, Attn.: Warranties. See back of your invoice for additional warranty and return policy information. All sales FOB Austin. Sales receipts required for all returns/exchanges. Supplies limited to stock on hand. No rain checks. Prices and specifications subject to change without notice and valid in the U.S.A. only. All items are subject to Dell Factory Outlet's 14-Day Price Protection Policy. Dell, the Dell logo, Latitude, OptiPlex and Dell Dimension are registered trademarks, and "get a GIGABUY!™" and GIGABUYS! are service marks of Dell Computer Corporation. Intel, the Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Dell disclaims proprietary interest in the marks and names of others. Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Quantities limited. ©1997 Dell Computer Corporation. All rights reserved. Printed in the U.S.A. Reproduction in any manner whatsoever without the written permission of Dell Computer Corporation is strictly forbidden. Dell cannot be responsible for errors in typography or photography. 6002

8 USERS CONTROL 32 COMPUTERS

Multi-User & Multi-Platform

- Connect up to 8 users and 32 CPUs to one switch - no extension unit required.
- Supports any mix of **PC, Sun & Mac** computers & peripherals.
- 1600 x 1200 resolution with no degradation.
- Add or change modules in the field.

FREE CATALOG call 800-742-8324

NTI NETWORK TECHNOLOGIES INC
1275 Danner Dr • Aurora, OH 44202
330-562-7070 • Fax: 330-562-1999
E-Mail: pcwd@networktechinc.com
www.networktechinc.com

VIDEO SPLITTERS

- Connect 16 monitors to one computer.
- 1600 x 1200 resolution with no degradation.
- Extend to 250 feet away from computer.

CIRCLE 435 ON READER SERVICE CARD

SVGA Splitters

HRT
HALL RESEARCH TECHNOLOGIES
800-959-6439
714-641-6607 fax: -6698
1506 Brookhollow Dr.,
Santa Ana, CA 92705
Celebrating Our 12th year!

Toll-Free Support
One Year Warranty
Quantity Discounts

- Display your PC's screen on many monitors simultaneously
- Perfect for demos, training and remote monitoring
- Proven wideband amplifier assures bright and crisp image - GUARANTEED!
- Automatically access one PC from two keyboards with ease
- Quality monitor and keyboard extension cables available to 500 feet
- Exclusive video switches, multiplexers and other unique products

CIRCLE 459 ON READER SERVICE CARD

The world hosts with Hiway

For high performance web hosting, more people turn to Hiway than anyone else.

Serving more than 30,000 web sites for customers in over 80 countries, Hiway is the worldwide leader in web hosting. With so many choices, why does everyone pick Hiway?

The world leader in FrontPage™ hosting

- ✓ 3 T3 lines to diverse backbones
- ✓ Silicon Graphics WebFORCE Servers
- ✓ Industrial-strength Cisco routers
- ✓ 99.5% uptime—guaranteed!
- ✓ Uninterruptible power
- ✓ 24 x 7 network operation center
- ✓ 40 terrabyte tape archive system
- ✓ 24 x 7 multilingual support
- ✓ Accounts set up within a few hours
- ✓ Domains registered within 24 hours
- ✓ 30 day money back guarantee
- ✓ Serving over 30,000 domains

PLANS FROM $24.95 PER MONTH

Reseller Opportunities Available

(800) 339-HWAY
www.hway.net
(561) 989-8574

Hiway Technologies
THE WORLDWIDE LEADER IN WEB HOSTING

CIRCLE 416 ON READER SERVICE CARD

Custom ULTRA SCSI Cables - Terminators - Cases

If you want Ultra SCSI Performance use our Teflon Cables & Active Terminators. Our knowledgeable SCSI Technicians will solve all your SCSI problems...guaranteed!

SCSIVue™ Active Terminato

From: $59

Four models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:
- Active Regulation • *Fast 50 & Fast Wide 68*
- Status Indicators • Gold Contacts

Active 2-1 SCSI Switch / Repeater

Benefits:
- Up to 14 Devices to 1 Computer
- Share Devices Between 2 Computers

Features:
- 2-1 Active Digital Switch/Repeater
- Regenerates SCSI Signal for Long Runs

From: $599

Gold Diagnostic Adapters

Styles: Gender Changers
- Both 50 pin and 68 pin (all combinations)

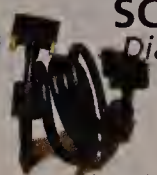
Styles: 68 pin Drive to 50 Bus
- 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)

Styles: 68 Pin Adapter Wide to 50 Pin Narrow
- 68 Pin External Adapter to 50 Pin (converts Host Adapter)

From: $49

Styles: For Adaptec Ultra Wide C
- Adapters with partial termination built in for 68 to 50 converters (converts Host Adapter

SCSIVue™ Gold Diagnostic Cables



Benefits:
- No Loss Of Important Data
- Faster Performance
- Test Cable Integrity

Features:
- Diagnostic Indicators • Large Ferrite Filters
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Extra Heavy 26 Gauge Wire • 100 Styles in Stock

From: $39

Teflon® 90 Ohm External Cables

Benefits:
- Ultra SCSI 40 MB/s operation
- Fixes Ultra SCSI Cable Problems

Features:
- Perfect 90 Ohm Impedance Match
- Triple Pronged Connector With Gold contacts

From: $159

Gold .8mm Ultra SCSI Cables

Benefits:
- Faster Performance
- Test Cable Integrity
- No Loss Of Important Data

Features:
- New .8mm Ultra SCSI Connector
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Diagnostic Indicators • Large Ferrite Filters

From: $109

Gold External Ultra SCSI Cases

- Ultra SCSI Custom Teflon Cable Available
- Custom Enclosures in 1 Day for Raid & Arrays

From: $99

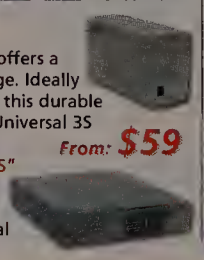
NEW! Temperature ALARM! Automatic Monitor & Control

SCSI 2+3 COMPATIBLE

The Vertical 3.5" Case Kit offers a small transportable package. Ideally suited for moving around, this durable case can take a beating. Universal 35 Watt power supply.

The Horizontal 3.5" or 5.25" Case Kit Offers a stackable solution for any desktop need. Shown with Optional Bay Cooler installed.

From: $59



Open Face and Closed Face Models Available.
Optional 50 or 68 Teflon® Cables Available.

NEW Accessories!

Dual Fan & Bracket $29

Bay Cooler Kit keeps those HOT Ultra SCSI Drives COLD as ICE!

HOT SWAP Pull Out Bays
Compatible with all 50 pin & 68 pin SCSI Buses up to Fast SCSI 2. From: $79.00

Custom Teflon® Internal Cables

Benefits: *Teflon® is a registered trademark of DuPont*
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:
- Perfect 90 Ohm Impedance • Custom in 1 Day
- Triple Pronged Connector - Gold contacts Silver Wire

From: $39

68 Pin Internal Cables, custom or stock, from 1 to 15 SCSI devices per cable. We can also make Custom 68 pin and 50 pin Combination Cables that allow you to use narrow drives on a wide cable.

Active Digital SCSI Repeater

From: $139

Benefits:
- Models for all SCSI types
- Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

Features:
- Active Termination and Signal Purification
- Ultra Fast Performance for Added Capabilities
- Diagnostic Capabilities • 30u" Gold Contacts

OEM SCSI Repeater

If you integrate SCSI Raids or Arrays and are having problems making it work, the Granite SCSI Repeater will make it work. Designed to fit inside any computer or external case.

SCSI Cable Tester - LED Readout

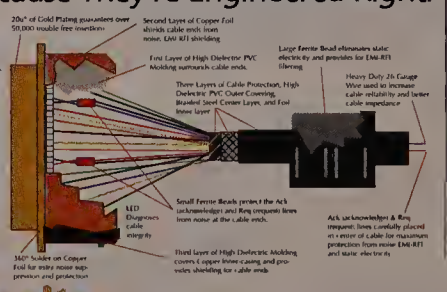
This Digital SCSI Cable Tester can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use anywhere you need it.

Three models to choose from:
- 50 pin IDC
- 50 pin Centronics
- 68 pin MicroD

From: $49

Granite Cables Are The Best Because They're Engineered Right.

Granite Cables were designed by SCSI Engineers to be the Best Cables On The Market. Everything about them means better performance and higher reliability. Our design incorporates an exclusive shield that protects the Acknowledge and Request lines from noise. Large Ferrite beads are installed on all cables to protect them from static and noise. Every cable incorporates a LED indicator that lets you know it is operating properly. We also use more GOLD on every cable. Add to this our impedance matching techniques and you have most of what makes us THE BEST!



Granite

Online Catalog at... www.scsipro.com The SCSI Solution Company D•I•G•I•T•A•L 3101 Whipple Rd. Union City, CA. 94587 Ph: 510-471-6442 Fax 510-471-6267

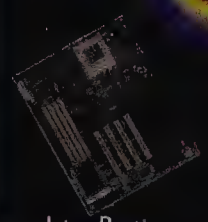
CIRCLE 454 ON READER SERVICE CARD

PC World Delivers the Buyers You Need to Reach

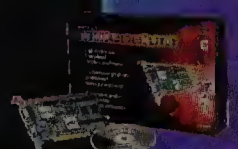
Call for more information

PC World Marketplace
203-857-5102
or
203-857-5102

YOUR SEARCH FOR THE LOWEST PRICE* IS OVER



Jaton Pentium MMX & 512K
$69



Matrox Millenium II VGA Card
$189

Princeton 15"/17" SVGA Digital Monitor
$245/$440

Western Digital 2.1 Gig Hard Drive
$170

USR 2X 56K Fax Modem
$155

SYSTEMS FOR SMALL BUSINESS
Intel MMX P166
$1118

SYSTEMS FOR STUDENTS
Intel P166
$1025

SYSTEMS FOR FAMILIES
Intel MMX P200
$1249

BUY ONLINE HERE

- THOUSANDS OF PRODUCTS
- UNLIMITED COMPUTER SYSTEMS
- GUARANTEED LOW PRICES
- 24-HOUR CUSTOMER SERVICE
- SECURE TRANSACTIONS

first time online buyers get an additional 10% OFF

CyberCash

DISCOVER

VISA

NNA TECHNOLOGIES
www.nnatech.com
1 888 2281 NNA

*WHILE SUPPLIES LAST

CALL OUR COMPETITION TO COMPARE!

COW	(800) 726-4239
Comput Ability	(800) 554-9950
EPS	(800) 447-0921
Gateway 2000	(800) 424-1392
Insight	(800) 467-4448
Magic PC	(800) 762-4426
Micro Pro	(800) 353-3003
Micro Xpert	(800) 736-4276
Micron	(800) 700-0591
Midwest Micro	(800) 682-2611
NNA Technologies	(888) 228-1662
PC Importers	(800) 619-9119
PC Mall	(800) 681-3282
PCs Compleat	(800) 581-7911
Treasure Chest	(800) 677-9781
USA Flex	(800) 477-7770

NNA TECHNOLOGIES

CIRCLE 442 ON READER SERVICE CARD

Better Prices. Bigger Selection. Better Call Now!

WE SELL MORE LCD PROJECTORS TO MORE PEOPLE THAN ANYONE! HERE IS WHY.

- ✔ Over 50 models in stock
- ✔ 30-day money back guarantee
- ✔ FREE technical support
- ✔ Uptime assurance
- ✔ Trade In-Trade Up
- ✔ Boxlight Certified for quality, reliability & value
- ✔ Overnight shipping

http://www.boxlight.com/pcworld/

BOXLIGHT™ CORPORATION

PRESENTING A BETTER WAY™

BOXLIGHT 2020 NEW

The first projector rugged enough for "Road Warriors."

- True 800 x 600 SVGA
- "Fold-away" design
- Tough steel frame
- Only 11 lbs. Light!

$4099

Business Lease*
$129/Month

REVOLUTION 3700 NEW

The new standard for portable multimedia performance

- 450 ANSI, True SVGA
- Lightweight – 12 lbs
- 3-LCD Polysilicon
- Zoom, Auto-Setup

Call For Price

CALL 1-800-762-5757 TODAY!

International: (360) 779 7901 **Fax:** (360) 779 3299
Government: (800) 497 4009 **Education:** (800) 689 6676
Monday - Friday, 6am - 5pm PST. Purchase orders accepted w/O.A.C.
Prices subject to change. Quantities may be limited.
30-day money back guarantee does not apply to Resellers.

NUMBER ONE IN RENTALS 800·736·6954

* Business lease is 36 month FMV lease requiring first and last month's payments at lease inception. Price does not include sales tax. Call for complete details.

PCW 8/97

CIRCLE 511 ON READER SERVICE CARD

BASON HARD DRIVE WAREHOUSE

3.5" Hard Drives

100MB	Conner CP3100	SCSI	$45
1.0GB	Samsung 310820	SCSI	$165
1.0GB	Seagate 51080N	SCSI	$185
1.0GB	Seagate 31055N	SCSI	$185
1.2GB	Seagate 31277A	IDE	$155
1.6GB	WD 21600A	IDE	$165
1.7GB	Seagate 31720A	IDE	$169
2.0GB	IBM DCAS	SCSI	$329
2.0GB	NEC 2100S	SCSI	$249
2.0GB	Quantum 32110S	Ultra	$219
2.0GB	Seagate 32132A	IDE	$175
2.0GB	Seagate 32107N	SCSI	$359
2.0GB	Seagate 32171N	Ultra	$399
2.0GB	Seagate 32550N	SCSI	$359
2.0GB	Seagate 52160N	Ultra	$269
2.5GB	Seagate 52520A	IDE	$199
3.0GB	Quantum 33240S	SCSI	$309
3.0GB	WD 33100	IDE	$215
3.5GB	Quantum 33840A	IDE	$279
4.0GB	Fujitsu 2954SY	Ultra	$579
4.0GB	IBM DCAS	Ultra	$439
4.0GB	Quantum 34550S	SCSI	$659
4.0GB	Seagate 15150N	SCSI	$639
4.0GB	Seagate 34371N	Ultra	$729
4.0GB	Seagate 14209N	Ultra	$799
5.0GB	Maxtor 85120	IDE	$379
9.0GB	Micropolis 1991	SCSI	$899
9.0GB	Micropolis 1991AV	SCSI	$899
9.0GB	Seagate 19171N	Ultra	$1099

Tape Drives

2.0GB	Conner 2004	DAT	$499
4.0GB	Conner 4324	DAT	$559
8.0GB	HP 1533	DAT	$829
8.0GB	Conner 8000	DAT	$659
14.0GB	ExaByte 8505XL	DAT	$1759
16.0GB	Conner 4584	DAT	$999

Wide SCSI Drives

1.0GB	Conner 1060W		$159
1.0GB	Quantum 31070W		$219
2.0GB	Quantum 32150W		$429
2.0GB	Seagate 32550W		$359
2.0GB	Seagate 32171W		$499
4.0GB	IBM DCAS-W Ultra		$459
4.0GB	Quantum 34300W		$739
4.0GB	Quantum 34550W		$699
4.0GB	Seagate 34371-UW		$749
4.0GB	Seagate 15150W		$699
9.0GB	IBM 39100W		$999
9.0GB	Micropolis 1991W		$999
9.0GB	Micropolis 3391W		$1099
9.0GB	Seagate 19171-UW		$1199
23.0GB	Seagate 423451W		$2999

2.5" Notebook Drives

810MB	Seagate 9816AG	IDE	$189
810MB	Toshiba MK1926FCV	IDE	$189
810MB	Toshiba MK1926FB	SCSI	$379
1.0GB	IBM Sanada-21080	IDE	$219
1.3GB	Seagate 91350A	IDE	$219
1.4GB	Toshiba 1403MAV	IDE	$229
1.6GB	Fujitsu 2724TA	IDE	$239
2.1GB	Toshiba MK2101MAN	IDE	$279
2.1GB	IBM DTNA-22160	IDE	$329
2.1GB	Toshiba MK2103	IDE	$329
3.0GB	Toshiba 3003MAN	IDE	$499
3.0GB	IBM 2301	IDE	$499

Memory

Standard 72-Pin SIMM

8MB	2x32/36	$33/ $50
16MB	4x32/36	$59/ $75
32MB	8x32/36	$119/$145

EDO 72-Pin SIMM

8MB	2x32	$33
16MB	4x32	$60
32MB	8x32	$119

Other Brands & Models Available

Call Us! 800-238-4453

Or, Visit our Web Page for Everyday New Low Prices!

www.basoncomputer.com

- 30 day money back guarantee
- Same day shipping on most orders
- No surcharge for credit cards
- Please add $69 for external drives
- Prices are subject to change without notice

Call: (818)727-9054 • Fax: (818)727-9066

CIRCLE 401 ON READER SERVICE CARD

Format and Load Windows 95 or NT to 4 Hard Drives In Less Than ONE MINUTE!

RECOMMENDED TEST CENTER 1996 Computer Reseller News FALL COMDEX

The Image MASSter 1000 & 500 Hard Drive Duplication and Diagnostic Systems

VARBusiness EDITOR'S CHOICE

- → IDE and SCSI models
- → Formats and Loads: DOS, Windows 95, Windows NT, SCO UNIX, OS/2, and Mac OS
- → Mix different size and model drives in the same load
- → Drive size, geometry, manufacturer and model independent
- → Supports notebook drives including: ThinkPad, Toshiba, Dell, Compaq, NEC, or any standard 2.5" drive
- → Transfer speed up to 144 MB/min
- → Single master drive capable of holding several software loads
- → Extensive read after write data verification and error reporting
- → Options: Ethernet, Diagnostics, Multi-MASSter, Database, Printer

Used by Thousands of MIS, Government, Military & Educational Institutions Worldwide

Register at **www.ics-iq.com** to win a FREE Image MASSter!

Intelligent Computer Solutions
9350 Eton Ave., Chatsworth, CA 91311
(818) 885-7500 • Fax (818) 885-6769

The perfect tool for MIS and System Integrators

Great for New System Configuration & Large Scale Operating System Changeovers

10/97

CIRCLE 452 ON READER SERVICE CARD

PC WORLD

Delivers the Managers Crucial to Your Marketing Success.

PC WORLD'S PC-proficient managers are involved throughout the buying process. They have the budget authority to sign off on final purchases and the knowledge necessary to recommend and evaluate brands.

Call For More information

(203) 857-5101
or
(203) 857-5102

Rent Space Here

www.9netave.net

Web Hosting Sale!

FREE With Every Plan

- Fast UUnet access into the Major Internet Backbone
- Powered by SGI Origin 2000 Server
- Multi-homed, Internet connected data lines
- Microsoft FrontPage extensions
- Your own FTP site
- Your own CGI directory
- Web site activity logs
- Cold Fusion Support
- Account "Control Panel" access via WWW
- Daily Tape Backup of your data
- Expert Technical Support
- On-site UPS
- 24-hour on-site monitoring
- Same day set-up
- No minimum contract
- E-Pub graphical chat room
- POP 3 Accounts
- Anonymous FTP
- 99% uptime guaranteed
- 90 day money-back guarantee

9NetOne Plan $14.95

Features:
- 25MB
- 6 mailboxes
- Domain name registration www.yourname.com
- Configurable, unlimited e-mail address forwarding
- Custom CGI script support via own cgi-bin directory
- Controllable Anonymous FTP
- Detailed web usage statistics & access to raw log files
- TrueSpeech® server support included (real-time audio)
- 1000 MB of data transfer per month 8¢ per MB over 1000

9NetPro Plan $39.95

Features:
- 100MB
- 25 mailboxes
- This special plan includes all features for 9NetOne Plan PLUS:
- Secure Server (SSL) access
- CyberCash®
- Real Audio/Video up to 1000 streams
- FTP Access
- 5000 MB of data transfer per month 8¢ per MB over 5000
- MS Access
- Webcast Video Server
- Unlimited domains

9NETAVENUE

1 888 9NET AVE (1 888 963 8283)

Co-location service available

Come See us at Comdex Booth #P2801

CIRCLE 410 ON READER SERVICE CARD

LOWEST PRICES ON THE NET!

35,000 PRODUCTS ON-LINE!

- Live auction - bids start at $5
- 20,000 spec sheets
- Product GIVEAWAYS - WIN!
- News and Announcements

GET IT ALL AT http://www.club-pc.com

END-OF-LIFE SAVINGS!
SONY
20SF2 20" Trinitron Color
$1299

LOW, LOW PRICES!
Quantum
Fireball Stratus 3.2GB IDE Hard Drive
$218

HUGE PRICE DROP!
TOSHIBA
Tecra 740CDT 166MHz w/MMX 3GB hard drive 13.3" XGA TFT
$4999

MONITORS

SONY
- 100SX 15" Trinitron $329
- 200SX 17" Trinitron $619
- 300SFT 20" Trinitron $1434

NEC
- A500 15" Chromaclear $335
- M700 17" Chromaclear $676
- E1100 21" Multisync $1354

PRINTERS

HEWLETT PACKARD
- HP LaserJet 6Pxi 6ppm ..... NEW! $727
- HP LaserJet 6Lxi ..... NEW! $379
- HP DeskJet 1000Cxi Tabloid COLOR! $474

GRAPHIC CARDS

matrox
- Mystique 220 4MB SGRAM ... $162
- Millennium II 4MB WRAM $247

HARD DRIVES

Quantum
- 2.1GB IDE Stratus $195
- 3.2GB IDE Stratus $256
- 3.2GB SCSI Stratus 10ms ... $319
- 4.3GB SCSI Stratus 10ms ... $384
- 6.4GB SCSI Stratus 10ms ... $497
- 2.2GB SCSI Viking $449
- 4.5GB SCSI Viking $675

NOTEBOOKS

IBM
- ThinkPad 380 P150 OS $1738
- ThinkPad 3800 P150 8x OS $2028

TOSHIBA
- Portege 300CT MMX/133 .... $3378
- Satellite Pro 440COX MMX/133 $2439
- Satellite Pro 460COX MMX/166 $3778
- Tecra 520COT MMX/166 .... $4278

simple TECHNOLOGY — MEMORY UPGRADES 100% GUARANTEED

Toshiba 110/200/430/740	16MB $117	32MB $229	64MB $478
Toshiba T1900, T1950, T4500, T4600	BMB $69	16MB $125	
IBM ThinkPad 355/360/755	BMB $65	16MB $117	
IBM ThinkPad 365X/380/560/760E/760X	BMB $57	16MB $108	32MB $259
NEC Verso E/V/M/P/4000	8MB $68	16MB $115	32MB $224
Compaq Contura 400	8MB $68	16MB $119	
Compaq Presario Notebook 1010-1080	8MB $58	16MB $112	32MB $229

FedEx WE SHIP OVERNIGHT • CALL FOR A FREE CATALOG

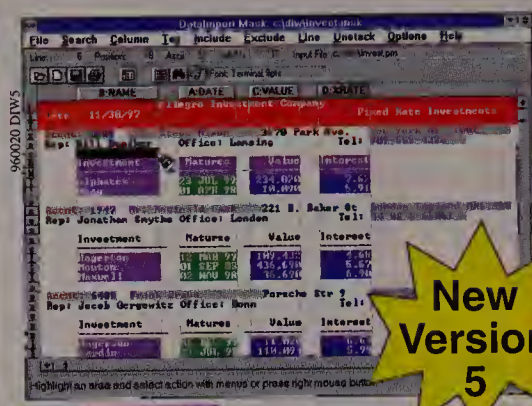
Local 714-707-3082
Fax 714-768-7307
Prices subject to change without notice.
60 Parker, Irvine, CA 92618

1-800-216-2763
ORDER 6AM - 6PM PDT • MON - FRI

ClubPC®
Source Code 83117

CIRCLE 502 ON READER SERVICE CARD

Garbage In... ...Data Out!



960020 DIW5

New Version 5

Pull data from any computer report into:

Access
Excel
dBase
HTML Tables
1-2-3
Paradox
Approach
Quattro
Clarion
and more!

DataImport®

File Translation Utility — for Windows

Go far *beyond* the meager limitations of import wizards and parsers. Selectively **mine data** from even complex multi-level reports and forms printed-to-disk. DataImport makes it easy to dynamically clean-up reports, parse names and rearrange data. Instantly create new files or add data to existing files.

DataImport does it all!

$189 Single User **$495** 5-User LAN

SPALDING SOFTWARE

Free Demo & Test Drive:
www.spaldingsoft.com
Voice: (770) 449-0594
Fax: (770) 449-0052
Norcross, Georgia USA

MasterCard DISCOVER NOVUS American Express VISA

CIRCLE 434 ON READER SERVICE CARD

COMP-U-PLUS Direct

Your Friend in the Industry

CALL TOLL FREE **800-287-2323**
20 Robert Pitt Drive, Monsey, NY 10952
NEW HOURS: MON-THURS 8:30- 9PM EST
SUN 10 AM-6 PM, MON-THURS 8:30 AM-9, FRI 8:30AM-5:30 PM EST

Visit our Web Site @ compuplus.com

- 30 day money back guarantee
- All items brand new factory fresh with complete manufacturers warranties
- Same day shipping
- Nationally advertised lowest on-line prices
- MC, VISA, AMEX & DISCOVER accepted – no extra charge

Friendly, Courteous and Knowledgeable salespeople always available to help you. Look and Compare. We have the LOWEST PRICES and BEST SERVICE

CD ROMS

- Toshiba 5602B 8 Speed (IDE) 52
- Toshiba 5702B 12x (IDE) 64
- NEW! Toshiba 6002B 16x (IDE) 74
- NEW! Toshiba 6102B 24x (IDE) 88
- Toshiba 5701B 12x SCSI 103
- Toshiba 3801B 15x SCSI 131
- TEAC 12 Speed IDE (512E) 62
- TEAC 516-E 16 Speed IDE 71
- NEW! TEAC 524-E 24 Speed IDE 87
- NEW! TEAC 516-S 16 Speed SCSI 133
- Plextor Twelveplex 12x Int SCSI 171
- NEW! Plextor 20x SCSI CD-ROM 199
- Samsung 12 Speed CD Rom/20 Speed .59/109
- Mitsumi 8 Spd IDE (FX800) 56
- Mitsumi 12x IDE (FX1200) 65
- NEW! Mitsumi 16x IDE (FX1600) 74
- NEW! Sony 611E 24x (IDE) 98
- Acer 16x (IDE) CD-Rom/24x 61/85
- Hitachi 16x IDE 71
- NEW! Panasonic CR 585-B 24x IDE 87

SOUND CARDS

- Creative Labs 16 IDE Plug n' Play 42
- Creative Labs 32 IDE PNP ..... SPECIAL 69
- Diamond Tech. 16 IDE Sound Card 18
- NEW! Diamond Monster 3D Audio 159
- NEW! AWE 64 Value 77
- Special Creative Labs AWE 64 W/IDE. Retail 125
- Special Creative Labs AWE 64 GOLD Retail 165

RECORDABLE CD-ROMS

- NEW! HP 6020i 6x2 Kit 322
- Panasonic 4x2 Kit w/Adaptec SCSI card 305*
- NEW! Sony 926 6x2 Complete Kit 315

FAX MODEMS

- US Robotics 33.6 Win/Modem Int. 45*
- US Robotics 33.6 Fax Mod Int (V.34) 71*
- US Robotics 33.6 Fax Mod. Ext. (V.34) ... 96*
- US Robotics 33.6 Voice (Duplex) Int. 89*
- US Robotics 33.6 Voice (Duplex) Ext 112*
- NEW LOWER PRICE! US Rob 128K ISDN Int .. 179
- NEW! US Robotics X2 F/M (56k) Internal 102*
- NEW! US Robotics X2 F/M (56k) External .. 119*
- NEW! US Robotics X2 (56k)w/voice Dup Int 117*
- NEW! US Robotics X2 (56k)w/voice Dup Ext 132*
- Cardinal 33.6 Fax Modem Int/Ext 65*/105*
- NEW! Cardinal 56k Int/Ext (x2) 94*/125*
- Supra 33.6 F/M Plug 'n Play w/Voice (Internal) 49
- NEW! Supra 56k w/Voice Int.. 105
- Hayes 56k Int./Ext. 125/157
- Practical Peripherals 56k Int/Ext. 124/157

NETWORKING & COMPUTER PERIPHERALS

- 3 COM 3C 509/900 Combo ISA/PCI 72/93
- Microsoft Mouse 2.0 Serial or PS2 21
- New! Microsoft Intellimouse Serial or PS2 ... 35
- LogiTech Trackman Marble ..... SPECIAL 48
- Mitsumi Windows 95 104 key keyboard 12
- Microsoft Natural keyboard ..... SPECIAL 48
- LogiTech Mouseman Combo (Ser.&PS2) 22

ADAPTEC SCSI CARDS

- 1505 ISA/SCSI Kit 42
- 2940U Ultra SCSI Kit (PCI) 165
- 2940WU Ultra Wide SCSI Kit (PCI) 191

PCI VIDEO CARDS

- NEW! Diamond Monster 3D 139
- Diamond Stealth 3D 2000 EDO Ram 2MB/4MB 48/72
- Diamond Stealth 3D 3000 2MB/4MB VRam 101/133
- Matrox Mystique 2MB/4MB SG Ram ... 88/108
- NEW! Matrox Mystique 220 4MB 127
- Rainbow Runner TV Tuner/Studio 69/215
- Matrox Millenium 3D 2MB/4MB VRam .127/149
- NEW! Matrox Millenium II 4MB/8MB 195/253
- ATI 3D Xpression PC2TV 2MB/4MB 83/99
- ATI 3D Pro Turbo PC2TV 4MB/8MB ... 135/177
- NEW! ATI All-In-Wonder 2MB/4MB 199/219
- NEW! STB Nitro 3D 2MB/4MB 72/89

ATTENTION: ALL CUSTOMERS:
ORDERS ARRIVE OVERNIGHT OR SECOND DAY
LOW, LOW $$$$$
ORDER EARLY, CLOSED OCT 2,3,15-22 FOR HOLIDAY

TAPE BACKUPS

- HP Colorado DJ-35 "350MB" Internal..... FREE TAPE 49
- HP Colorado T1000 "800MB" Int/Ext ... FREE TAPE ..89/133
- HP Colorado T3000 3.2 GIG Int .... FREE TAPE ...155
- HP T4000 SCSI 4/8 GIG Int/Ext .... FREE TAPE ..329/411
- Seagate T*800MB Int/Ext..... FREE TAPE ..59/97
- Seagate T3200 3.2 GIG IDE Int/ FREE TAPE Ext ..135/159
- Seagate T8000 8 GIG Int/Ext .. FREE TAPE ..299/379

IDE/SCSI HARD DRIVES

- Seagate 3630A (635MB) 125
- Seagate 31276A 134
- Seagate 31720A (1.7 MB) 141
- Seagate 32132A (2 GIG) IDE 151
- Seagate 52520A (2.5 GIG) IDE 177
- NEW! Seagate 33240A (3.2 GIG) IDE 195
- NEW! Seagate 36450A (6.4 GIG) IDE 345
- Seagate 52160N 2.1 GIG ULTRASCSI-2 .. 229
- Western Digital Caviar 2850 (850MB) 139
- Western Digital Caviar 21200 (1.2 GIG) 149
- Western Digital Caviar 21600 (1.6 GIG) IDE .. 159
- NEW! Western Digital Caviar 22100 (2.1 GIG) . 171
- NEW! Western Digital Caviar 32500 (2.5 GIG) . 191
- NEW! Western Digital Caviar 33100 3.1 GIG IDE 201
- NEW! Western Digital Caviar 34000 4.1 GIG IDE 258
- Fujitsu M 1636 (1.2 GIG) IDE (fast 10ms) 133
- Fujitsu M 1623 (1.7 GIG) IDE (fast 10ms) 145
- Fujitsu M 1624 (2.1 GIG) IDE (fast 10ms) 155
- Fujitsu M 1638 (2.5 GIG) IDE (fast 10ms) 172
- NEW! Maxtor 84320 Ultra DMA 4.3 Diamond .. 259
- NEW! Maxtor 81750A (1.7 GIG) 159
- Maxtor 72004AP (2.1 GIG) 169
- NEW! Maxtor 82560A (2.5 GIG) Diamond 175
- NEW! Maxtor 84000 (4.0 GIG) Diamond IDE .. 244
- NEW! Maxtor 85120A (5.1 GIG) Diamond IDE .299
- Mitsumi Floppy 1.4/1.2 ..... 17/39
- TEAC 1.4/1.2 Floppies 20/39
- SONY 1.4 Floppy 20

VISA, MC, AMEX, DISC accepted • CODs, m/o or cashier chk only. Sorry P.O.'s w/ pre-payment only • Shipping, handling & insurance additional • Friendly, courteous and knowledgeable salespeople • Alternate 800 number 800-287-8786 • Dealers and bulk orders please call 914-352-8100 • RMA with auth. only. No restocking fee first 30 days. Prices may fluctuate due to availability. • For tech support & customer service 10AM-5PM E.S.T. call 914-352-8100 * Price after rebate

CIRCLE 464 ON READER SERVICE CARD

Bar Codes Direct

FROM THE MANUFACTURER

Labeling Software

For Dot Matrix or LaserJet

WINDOWS AND DOS!

- Any Format, Any Label. WYSIWYG, Text Design
- **Formats for Sears, K-Mart, Penney's, WalMart, TCIF, Logmars, AIAG, etc.**
- Code 39, UPC/EAN, 128, 2 of 5, Codabar, etc.
- Big Text and PCX. Powerful, Versatile, Easy!
- Imports ASCII data files from dBase, etc.
- LabelRIGHT™ for **Windows™ – $295**
- LabelRIGHT™ for **DOS–$279**

Bar Codes for Windows™

- Insert bar codes into any font based Windows program via "Hot Key"
- Code 39, UPC/EAN, UCC-128,128, 2of5, Codabar
- Fonts, Bitmaps and Metafiles, Complete – **$199**

2-Way Radio Reader

Scan and Key On-line with Wireless Reader

- Computer sends Display Prompts and Voice too!
- Kybd, Wand, Laser or CCD
- 1-16 Terminals/Base Station
- 6.3" x 3.3" x 1.25", 14 oz.
- 1,000 foot Range from Base
- 2 way RS-232 Communication
- Complete Terminal – **$1215**
- With Integrated Laser – **$1790**

Thermal Transfer Printers

- 2 per second Thermal Transfer – Up to 4"wide
- Supports all Popular Bar Codes; 1 year Warranty
- Prints Bar Codes, Big Text, and PCX Graphics
- Small size, Weighs 20 lbs.
- Complete with labels, ribbon, cable, LabelRIGHT Windows or DOS software, and Datamax Ovation Printer – **$1095**

Portable Bar Code Readers

for PC, Mac and Serial

- Battery Operated Reader – 64K or 256K
- Keyed and Scanned Data Input
- Upload Data at PC via Serial or Keyboard
- Display messages & voice messages prompt operator.
- Pick lists, tables.
- Wand, CCD or Laser Scanner
- Code 39, UPC/EAN, 2 of 5, 128, 93, etc.
- Date/time stamps
- Built-in Inventory Programs -No Programming Necessary
- **Very Easy to Create Custom Prompts**
- Small Size-Weighs Only 12 oz.
- 64K Unit Complete with Wand & Voice – **$759**
- 64K Unit with Integrated Laser– **$1299**

Bar Code Readers

for IBM PC, Mac and Serial Terminals

- Attaches as 2nd Keyboard
- No Software Changes Needed to Read
- Code 39, UPC/EAN, Code 128, 2of5, 93, etc.
- Wand, Magstripe, CCD, Slot Badge or Laser
- All European Keyboards Supported
- Superior Read Rates. Made in USA.
- **Top Rated by Independent Reviews**
- Complete Wand only Reader – **$299**
- Complete with Laser Scanner – **$649**

Cordless RF CCD Scanner

- Transmits up to 100' away from Base Station
- Base attaches as 2nd Keyboard to PC or Mac
- Complete Base Station and "Laser-like" RF CCD Scanner with 5" depth of field – **$899**

Ordering is Easy! 1-800-345-4220

Europe Phone: (353) 1 6614 566 • Fax: (353) 1 6614 622 • *USA* Phone: 408-458-9938 • Fax: 408-458-9964

- **Same Day Shipping**
- **30 Day Money Back Guarantee**
- **Direct from Manufacturer**
- **Free "800" Support**
- **Free UPS Blue in USA**

Visit our Web Site at:
www.barcodehq.com

WORTHINGTON DATA SOLUTIONS

CALL FOR FREE CATALOG AND BAR CODE PRIMER!

ADDRESS FOR SUCCESS

http://www.aics.edu

Welcome to the AICS Virtual Campus

- Earn B.S. and M.S. in Computer Science
- DISTANCE EDUCATION
- Object oriented B.S. program
- New courses in Java, Networking, HTML, MIS
- Approved by more than 275 companies
- Follows ACM/IEEE guidelines
- Thousands of students throughout U.S.

AMERICAN INSTITUTE FOR COMPUTER SCIENCES

ACCREDITED MEMBER World Association of Universities and Colleges

Free catalogue
1-800-767-AICS
or ***http://www.aics.edu***

PC WORLD delivers the managers crucial to your marketing success.

78% of **PC WORLD'S** employed subscribers are managers–the key people your advertising must reach in today's highly competitive marketing environment.

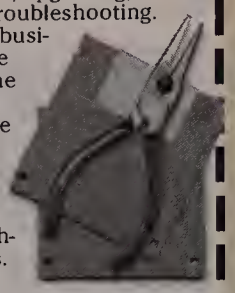
Call Now For More Information
203-857-5101 • 203-857-5102

EDUCATION

Be a PC repair expert!

CAREER-LEVEL HOME STUDY

Learn PC repair, upgrading, installation, and troubleshooting. Open your own business, or increase your value on the job. Our professional-level home study program lets you learn—and then earn—*without* a costly workshop or high-tech instruments. **Send or call 24 hours a day for your free literature.**



Call 800-223-4542

Name _____
Address _____
City/State _____ Zip _____
Age _____ Phone ( ) _____

The School of PC Repair
PCDI, 6065 Roswell Road
Dept. JJL684, Atlanta, GA 30328

CIRCLE 451 ON READER SERVICE CARD

SYSTEMS

Rent Computers Printers

From Only **$75**/mo.

Lowest Rental Rates in the USA !

Compare • Switch • Save

Always Rent New Technology

Call: (213) 937-6700

AMCO Rents and Sales, Inc.

CIRCLE 445 ON READER SERVICE CARD

SERVICES/SUPPLIES

1-800-8-GLOBAL

GLOBAL®

FREE catalog

228 page guide to computer furniture, supplies & accessories

COMPUTER SUPPLIES
11 Harbor Park Dr.
Dept. 94 PCW
Port Washington, NY 11050

CIRCLE 508 ON READER SERVICE CARD

SERVICES/SUPPLIES

Insures Your Computer

SAFEWARE's Computerowners insurance policy provides for repair or replacement of your computer hardware, media and purchased software. Annual premiums start at $49. Cover against theft, fire, power surge, natural disasters, and even accidental damage!

Call 1-800-800-1492

SAFEWARE, The Insurance Agency Inc.
5760 N. High Street
PO Box 656
Columbus, OH 43085
Local: 1-614-781-1492

CIRCLE 421 ON READER SERVICE CARD

SERVICES/SUPPLIES

MIRROR IMAGES

MIRROR IMAGES

DISKETTE DUPLICATION

- ALL DISK FORMATS
- FAST 24 HOUR TURNAROUND
- EXCEPTIONAL PRICING AND SERVICE

Superior duplication . . .
Your reputation depends on it.
Our reputation assures you of it.

Call for more information and quotation.

800-322-0577
www.mirror-images.com

FACT: PC WORLD subscribers who are involved in the buying process buy for an average of 320 PCs each.

SERVICES/SUPPLIES

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:

©1997 DRIVESAVERS, INC.

1. We're the most trusted and respected data recovery specialists.
2. 24-hour, onsite, and weekend service available.
3. Proprietary techniques so advanced we retrieve data others might simply abandon.
4. Over 12 years of data recovery experience.
5. Certified to maintain most drive warranties.
6. Featured by CNN, NextStep, C-Net, Forbes.
7. All storage devices; DOS, Win95, WinNT, OS/2, Mac OS, UNIX, Sun, SGI, Novell.

Clip and save this ad. Visit DriveSavers at: www.drivesavers.com

DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949, INTL.: 415-382-2000, FAX: 415-883-0780

CIRCLE 431 ON READER SERVICE CARD

SECURITY

Sentinel is the #1 Solution to Piracy

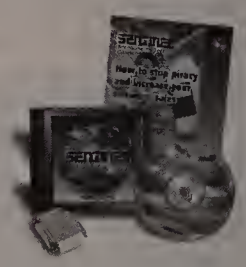
Piracy is the greatest threat to the success of your software business. Today, the Internet and CD-ROMs make your software more vulnerable to piracy than ever before.

Stop piracy and ensure your revenue with Sentinel, the world's leading protection. Over 25,000 developers have relied on more than 11 million Sentinels to protect their software.

Call one of our security specialists today to order a ***Sentinel Developers Kit*** and receive your FREE guide: ***How to stop piracy and increase your software sales.***

800-705-5552

www.rainbow.com/dkit



SENTINEL
Software Protection
The #1 solution to piracy

RAINBOW TECHNOLOGIES TEL: (714) 450-7300 • FAX: (714) 450-7450 • EMAIL: sentinel@rainbow.com • FRANCE: (33) 1 41 43 29 00 • GERMANY: (49) 89 32 17 98 0 • U.K.: (44) 1932 579200
©1997 Rainbow Technologies, Inc. Sentinel is a registered trademark of Rainbow Technologies. *Distributors located worldwide, call or visit our web site for a complete listing.*

CIRCLE 411 ON READER SERVICE CARD

SOFTWARE GENERAL

Software Blowout!!!

USA's #1 Software Provider

Microsoft Office 97 PRO	$250
Microsoft Office 97 STD	$199
Microsoft Office STD 4.2	$199
Microsoft Office PRO 4.3	$240
M.S Win Svr NT 4.0	$475
M.S Win Wrkst NT 4.0	$185
Microsoft Project 4.0	$250
Autocad LT w/95	$310
MS Word/Excell/Powerpt	$149
Microsoft Frontpage 97	$ 99
Adobe Photoshop 4.0	$325
Adobe Pagemaker 6.5	$299
Adobe Illustrator 7.0	$225
Macromedia Freehand 7.0	$225

Call for other item not listed.

SOFTWAREMART +
(800) 785-0048
call 9 to 6 PST FAX: (818) 346-1890
prices subject to change

CIRCLE 415 ON READER SERVICE CARD

SOFTWARE GENERAL

SOFTWARE Liquidation

Lowest Price . Limited Stock

Adobe Illustrator 7	$205
Adobe PageMaker 6.5	$275
Adobe Photoshop 4	$295
Adobe Premier 4.2	$295
MS NT Workstation 4	$155
MS NT Server 4	$435
MS Visual J++ Pro	$55
MS Visual Basic 5 Pro	$195
MS Visual Basic 5 Ente	$385
MS Visual C++ 5 Pro	$195
MS Visual C++ 5 Ente	$385
MS Visual FoxPro 5 Pro	$195
MS Visual Studio 5 Pro	$585
Corel WordPefect Ste 7	$95
Corel WordPefect Ste 8	$225
Corel Draw 7	$275

EZ Quest (800) 966-0188
VISA, MC, AMEX, prepaid cashier check

CIRCLE 476 ON READER SERVICE CARD

UPGRADES/MEMORY

TANDY UPGRADES

Hard Cards for 1000's
21meg $169 210meg $229
1000 EX & HX Hard Drives
Upgrade Motherboards
586-133 $349
686-P166+ $449
Upgrade Your TANDY Book $19.95
Keyboards $79, 360k or 720k FDs $49

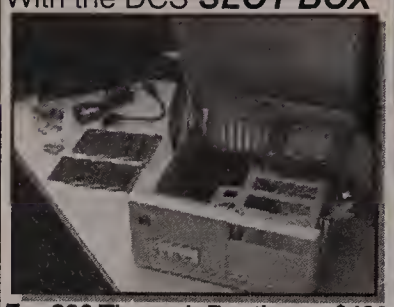
We sell New and Used Hard Drives, Floppy Drives, Motherboards, Memory, Keyboards, VGA & CGA Monitors/Cards, and more for Tandy. **Call or write for our FREE catalog.** We buy used Tandy computer equipment.

DCS Industries
5265 Hebbardsville Rd.
Athens, OH 45701
800-537-3539
www.dcsindustries.com
Foreign 614-594-4180
FAX 614-592-1527
U.S. & Canada

CIRCLE 493 ON READER SERVICE CARD

Add 7-ISA

With the DCS *SLOT BOX*®



For 286 Through Pentiums- $489

Upgrade Motherboards
Compaq, Dell, HP, IBM Gateway, Packard Bell

686-P166+	$ 449
Pentium 166 MMX	$ 599
Pentium 200 MMX	$ 799

DCS Industries
800-537-3539
www.dcsindustries.com
FAX 614-592-1527
Local 614-594-4180
Call for FREE Catalog

CIRCLE 465 ON READER SERVICE CARD

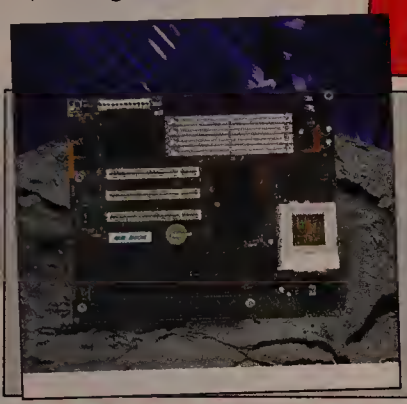
UPGRADES/MEMORY

The Finest PC Circuit Boards!!!

HSB COMPUTER LABORATORIES

the nation's largest full-line PC circuit baard specific manufacturer and distributor caters ta individuals and businesses interested in anly the finest hardware and service at the best price, pravided by a lang term, financially stable campany. Far aver a decade, we at HSB have earned aur standing as the mast reputable circuit baard manufacturer and distributar in the industry. Dan't make the mistake af buying 'Thraw-Away' circuit baards from a campany withaut any lang term cammitment ta your satisfactian. If we saund like what yau're laoking far, please give us a call at...

(800) 497-0401
or
www.HSB-Labs.com



HSB 64-Bit AT and ATX MainBoards

Our MainBoards are the finest on the market, designed from the ground up to compete head-to-head with the most expensive and sophisticated designs available. Whether you're thinking of upgrading your existing system, or building a new one from scratch, you can't go wrong with HSB...

We Make Your Buying Decisions Easy!!!

With HSB you'll receive:

- ✓ The absolute best price. In over a decade, HSB has never been beaten on price. If you happen to come across a better price on a comparable product, we'll beat it. No questions asked...
- ✓ A full 2 to 5 year circuit board warranty paired with a limited lifetime warranty on all 'Turbo' SIMM's, DIMM's and CPU's. Furthermore, we've always provided our customers with a full 60 day 100% money-back guarantee and no restocking charges...
- ✓ Free technical support along with a non-commissioned sales staff. No one makes it easier to buy and install your componentry than HSB. Even our owner's manuals are the best you'll find anywhere...

Please call for up to the minute pricing or to receive our lastest full color catalog...

34208 Aurora Road #297, Cleveland, OH 44139 216-498-1356 [Local] 216-498-1374 [Fax]

UPGRADES/MEMORY

We'll *Pay YOU* for Your Computer Memory!

We BUY Back All Types of Memory...
30 pin, 72 pin, 168 pin, SIMMS, DIMMS, Notebook & Laser Memory
All Memory Has Value!
Call us and get a price for your memory.

LIFETIME WARRANTY — **We Also SELL MEMORY** — LOWEST PRICES!

72 PIN SIMMS

		NON PARITY	EDO	(36 BIT) PARITY
1x32	4MB	18.00	18.00	25.00
2x32	8MB	33.00	33.00	50.00
4x32	16MB	59.00	59.00	79.00
8x32	32MB	125.00	125.00	179.00
16x32	64MB	339.00	339.00	399.00

30 PIN SIMMS

	3 CHIP	9 CHIP
1MB	5.00	10.00
4MB	19.00	27.00
256K	1.00	1.00

DIMMS

	SDRAM 168 PIN	Apple 168 PIN	168 PIN ECC/EDO
4MB	—	39.00	—
8MB	69.00	55.00	79.00
16MB	89.00	89.00	109.00
32MB	159.00	159.00	229.00
64MB	379.00	299.00	479.00

Laser Printer Memory

	1	2	4	8	16	32
HP	14	29	39	69	109	199
Epson	14	29	—	69	129	219
Pana	14	29	—	69	—	—
Lexmark	14	29	39	69	119	219

NOTEBOOK

	4	8	16	32
AST	49	—	119	219
Canon	49	69	119	219
Compaq	49	69	119	219
Dell	49	69	119	—
Epson	49	69	119	—
Fujitsu	—	69	119	199
Gateway	49	69	119	229
IBM	49	69	119	229
NEC	49	69	119	219
Sharp	49	69	119	219
Toshiba	49	69	119	219
Winbook XP	—	—	119	219
Zenith	49	69	119	—

Prices differ depending on model. These are general prices.

We Carry a Complete Line of Desktop, Notebook, Laptop, Subnote, Credit Card (IC DRAM) Modules, Video, Cache and Macintosh Memory Upgrades. Call with your machine type! Memory Modules New & Used have a Lifetime Warranty! Call for CPU Chip Pricing!

OVER 30 YEARS EXPERIENCE

The Memory Liquidators
(800) 718-7755
www.memoryliquidators.com *OR* e-mail: sales@ml.win.net
prices subject to change without notice

"The company that buys Memory back"

531 Main St., El Segundo, CA 90245 • Ph. 310-326-5656 • Fax 310-326-7790 • M-F: 8-5 pst

CIRCLE 520 ON READER SERVICE CARD

BUSINESS DIRECTORY

MAIL ORDER PROCESSING SOFTWARE

- Order Entry
- Credit Card Processing
- UPS Manifest
- Inventory
- Mail List Management
- Advertising Tracking
- Versions under $300

PC INNOVATIONS
1-800-774-6668

CIRCLE 471 ON READER SERVICE CARD

IBM 486 COMPUTER

Warranty/Options Available
Only $249

COMPUTER DEPOT
800-652-6650

CIRCLE 472 ON READER SERVICE CARD

USED SOFTWARE

- Used IBM Compatible Software
- Save up to 50% on Current Versions
- Huge Savings on Prior Versions
- Includes Original Manuals & Disks
- Guaranteed Complete & Virus Free
- 30 Day Money Back Guarantee
- Amex, Discover, MC & VISA
- Call 7am–4pm PST M–F for Free Price List

Recycled Software, Inc.
PO Box 33999
Las Vegas, NV 89133-3999
800-851-2425 • Fax 702-655-5662
http://members.aol.com/recycledsw/

CIRCLE 441 ON READER SERVICE CARD

TOO BUSY FOR SEX?

Then you need our personal task organizer program. It's simple, fast, convenient and it works. Better organized = more time = . . . well, that's up to you. Introductory special $29.95.

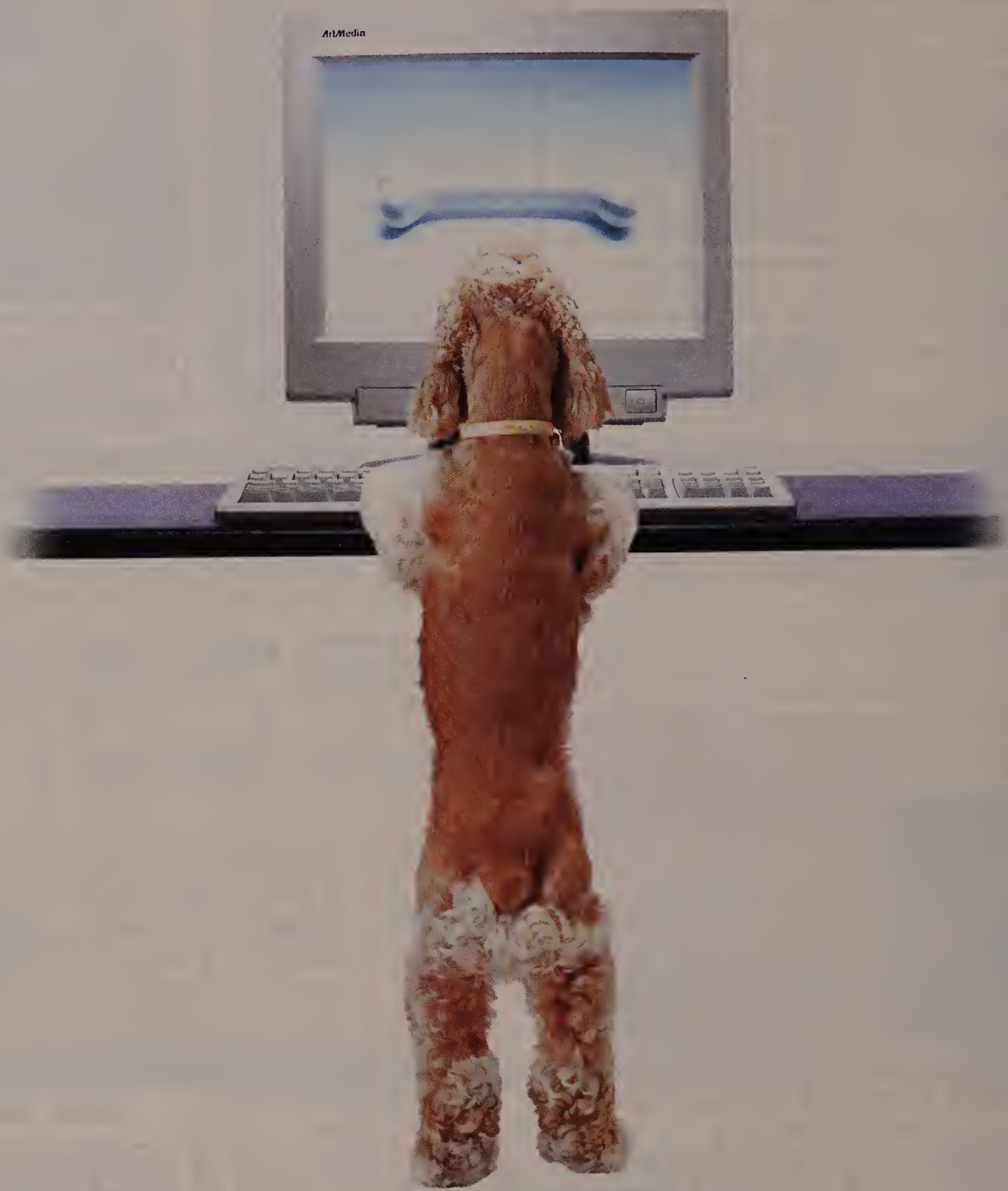
Impatient Cow Enterprises Ltd.
1-613-966-7808 ext.47
www.impatientcow.com/cy

CIRCLE 419 ON READER SERVICE CARD

FACT: 78% of PC WORLD'S employed subscribers are managers.

RUFF, WOOF, WOOF, ERRRRRRR, WOOF...
RUFF, WOOF, ERRRR, WOOF, WOOF...

ARTMEDIA'S 17" MONITOR. VOTED BEST 17" MONITOR.



THE EDITORS AT BYTE MAGAZINE HAVE SOMETHING TO BARK ABOUT. BYTE JUST VOTED ARTMEDIA'S 17" MONITOR THE BEST 17" MONITOR. MAYBE IT WAS OUR ADVANCED TRINITRON TECHNOLOGY, THE FLATTER SCREEN OR THE SUPER-FINE PITCH. OUR MONITORS OFFER SHARPER RESOLUTION, BETTER FOCUS,

LESS DISTORTION AND HIGHER BRIGHTNESS—BASICALLY, JUST A BETTER PICTURE! AND A SOUND INVESTMENT. SO IF YOU WANT THE BEST PROFESSIONAL MONITORS ON THE MARKET, LISTEN TO THE EXPERTS. THEY KNOW WHAT THEY ARE BARKING ABOUT.

ARTMEDIA TN-188ST
BYTE JANUARY 1997.

BYTE BEST

ArtMedia®
WHERE REALITY IS TRUE

energy EPA POLLUTION PREVENTER

TCO 1992 REDUCED ELECTROMAGNETIC FIELDS AUTOMATIC POWER DOWN

ARTMEDIA USA 2272 CALLE DEL MUNDO SANTA CLARA, CA 95054, USA TEL: 1-800-682-7863 FAX:1-408-980-8999 HTTP://WWW.ARTMEDIA.COM
PACIFIC TECHNOLOGY CO., LTD. 7F, NO. 285, CHUNG HSIAO E. RD., SEC. 4, TAIPEI, TAIWAN, R.O.C. TEL:886-2-778-5850 FAX:886-2-741-9521 HTTP://WWW.ARTMEDIA.COM.TW

Circle 20 on reader service card

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription to PC World plus a free mouse pad (U.S. only). You will be billed $21.97

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

10/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

October 1997 This card expires February 6, 1998 N1

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 848 PORTLAND OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Reader Service Department
12950 SW PACIFIC HWY STE 7
TIGARD OR 97223-9750

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription to PC World plus a free mouse pad (U.S. only). You will be billed $21.97

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

10/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

October 1997 This card expires February 6, 1998 N3

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 848 PORTLAND OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Reader Service Department
12950 SW PACIFIC HWY STE 7
TIGARD OR 97223-9750

FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

INFORMATION FROM ADVERTISERS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440
441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460
461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480
481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520

☐ Check here for a 1-year (12 issue) subscription to PC World plus a free mouse pad (U.S. only). You will be billed $21.97

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

PRODUCTS FEATURED IN EDITORIAL

601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640
641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660
661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680
681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720
721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740
741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760
761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780
781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820
821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840
841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860
861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880
881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900

PRODUCT CATEGORY INFORMATION

10/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

Editorial Features (see article for numbers)

901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920

Advertised Products

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

October 1997 This card expiresFebruary 6, 1998 N2

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 848 PORTLAND OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

Reader Service Department
12950 SW PACIFIC HWY STE 7
TIGARD OR 97223-9750

PC WORLD

PRESIDENT, CEO, AND PUBLISHER Richard J. Marino
Assistant to the President, CEO, and Publisher Nancy L. Jacobs

ADVERTISING SALES

VICE PRESIDENT, ASSOCIATE PUBLISHER Jeff Edman
BUSINESS MANAGER Patricia Owen
DIRECTOR OF ADVERTISING Robert Carrigan
ASSISTANT TO THE DIRECTOR OF ADVERTISING Christine McGovern

EAST

EASTERN ADVERTISING DIRECTOR Bob Ostrow (508/370-0844)
ADMINISTRATIVE ASSISTANT/OFFICE MANAGER Ellen Sanderson
Mid-Atlantic/Manhattan/Eastern Canada Wayne Silverman, Senior Account Manager (201/587-0090)
Thalia M. Karakitsios, Account Manager (201/587-0090)
New England/Ohio Michael Carroll, Senior Account Manager (508/370-0842)
Southeast/Pennsylvania Judy Sutter, Senior Account Manager (770/394-0758)
East & Midwest Greg Harney, Account Representative (508/370-0846)

MIDWEST/TEXAS

MIDWEST ADVERTISING DIRECTOR Harvey Diamond (972/233-3492)
ADMINISTRATIVE ASSISTANT Janine Goble
Midwest Kathy McKay, Senior Account Manager (847/827-4477)

NORTHWEST

NORTHWEST ADVERTISING DIRECTOR
Mid-S. F. Peninsula/Oregon/Washington Roy Kops (415/243-0500)
ADMINISTRATIVE ASSISTANT Alison Fennings Wetherall
Fremont, CA/South Bay (area code 408) Kevin Normandeau, Account Manager (415/243-0500)
San Francisco Bay Area Colleen Hirner, Account Manager (415/243-0500)
West Duane Hampson, Account Representative (415/243-0500)

SOUTHWEST

SOUTHWEST ADVERTISING DIRECTOR
Los Angeles/Orange County/Montana/Wyoming/Western Canada Bill Hanck (310/312-8008)
ADMINISTRATIVE ASSISTANT Joyce Clarke
Southern California (San Diego), Colorado/Idaho/Nevada/Utah/New Mexico/Arizona Lisa Zimmerer, Senior Account Manager (714/250-8081)

CONSUMER ADVERTISING SALES

Eastern U.S. Edman & Company (212/551-1121)
Michigan/Pennsylvania/Ohio Hartle & Heth (248/642-7273)
Western U.S. Hutch Looney & Associates (213/931-3444 x227)

PC WORLD MARKETPLACE

PC WORLD ACTION CARDS

DIRECTOR Pat Fales (203/857-5115)
EASTERN ACCOUNT MANAGER Katherine Noto (203/857-5101)
WESTERN ACCOUNT MANAGER Matthew Kurtz (203/857-5102)

PC WORLD REPRINTS

Michele Olk (612/582-3810)

MARKETING

SENIOR MARKETING MANAGER Sandy Wong
PR SPECIALIST Amy Dalton
PRESENTATION SPECIALIST Peter Bloch
MARKETING COORDINATOR Harriet Newman

CIRCULATION

VICE PRESIDENT, CIRCULATION Shawne Burke Pecar
ASSISTANT TO THE VICE PRESIDENT Ann Dempsey
SENIOR PROMOTION MANAGER Ellen DiMatteo
CIRCULATION BUSINESS MANAGER David Cobb
SINGLE COPY SALES MANAGER Cheryl Stephenson
BILLING AND RENEWAL MANAGER Lisa Radler
PROMOTION MANAGERS Richard McCarthy, Shira Weisbach
SINGLE COPY SALES COORDINATOR René Monday
CIRCULATION ASSISTANT Daniella Zucker
CUSTOMER SERVICE SPECIALIST Shama Ali

RESEARCH

VICE PRESIDENT, RESEARCH Cheryl Brink
RESEARCH MANAGER Jocelyn Ritchie
RESEARCH ANALYSTS Sandra O'Boyle, Stephen Riddle

PRODUCTION

VICE PRESIDENT, MANUFACTURING Linda Manes Goodwin
PRODUCTION DIRECTOR Nadia Maudsley
PRODUCTION MANAGER Jennifer Darnell
DESKTOP PUBLISHING COORDINATOR Nancy Jonathans
AD TRAFFIC COORDINATOR Harry Topalian
ADVERTISING INFORMATION MANAGER Dan Gordon
ADVERTISING INFORMATION ASSISTANT Yuliya Korentsvit

PC WORLD ONLINE

EXECUTIVE DIRECTOR, OPERATIONS Madeleine Buckingham
DIRECTOR, CIRCULATION Noël McLaughlin
DIRECTOR, MARKETING & RESEARCH Scott Danish
DIRECTOR, INSIDE SALES Diane Templin
DIRECTOR, MARKET DEVELOPMENT Stephen Shores
NATIONAL ACCOUNTS, EAST COAST Sandy Schackman
NATIONAL ACCOUNTS, TIPWORLD Charley Hoeffer
ACCOUNT EXECUTIVES Gabrielle Green, Melissa Gruber, Michael Hamilton, Wendy Lee, Sean Murphy
ADVERTISING TRAFFIC COORDINATOR Batel Libes
SALES OPERATIONS COORDINATOR Erin Wayman
AUDIENCE DEVELOPMENT MANAGER Declan Fox
INTERACTIVE CUSTOMER SERVICE MANAGER Mark Green
LICENSING MANAGER Ulla McGee
BUSINESS ANALYST Angie Weber
FINANCIAL ANALYST Tobias Harting
BUSINESS DEVELOPMENT ASSOCIATES Kimberly Lyons, Rachel Payne
MARKETING COORDINATOR Cheryl Allen
ASSISTANT TO THE PUBLISHER Vicki Klum

ADMINISTRATION

HUMAN RESOURCES AND INFORMATION SYSTEMS

VICE PRESIDENT Richard Willoughby
MANAGER Thalia Ohara
REPRESENTATIVE Christine Selfridge
VICE PRESIDENT, CIO Henri Froissart
DIRECTOR, INFORMATION SYSTEMS Norman Noble
NETWORK MANAGER Rodney Barnes
INFORMATION SYSTEMS SPECIALISTS Pearl Chan, Stan Erhart

FINANCE

SENIOR VICE PRESIDENT, CFO Vicki Peilen
ACCOUNTING/OPERATIONS MANAGER Pat Murphy
ACCOUNTING/FACILITIES MANAGER Michelle Reyes

PC World is a publication of International Data Group, the world's leading information technology media, research and exposition company. International Data Group publishes over 275 computer publications in over 75 countries. Sixty million people read one or more International Data Group publications each month. International Data Group's publications include: **Argentina:** Annuário de Informática, Computerworld Argentina, PC World Argentina; **Australia:** Australian Macworld, Australian PC World, Australian Reseller News, Computerworld, Computerworld 100 Australia, Digital News Australia, IT Casebook, Network World, Publish, Webmaster; **Austria:** Computerwelt Osterreich, Networks Austria, PC Tip Austria; **Bangladesh:** PC World Bangladesh; **Belarus:** PC World Belarus; **Brazil:** Annuário de Informática, Computerworld, Macworld, Network World Brazil, PC Player, PC World, Publish, Reseller News Brazil, Supergamepower; **Bulgaria:** Computerworld Bulgaria, Macworld Bulgaria, Network World Bulgaria, PC World Bulgaria; **Canada:** CIO Canada, Client/Server World, ComputerWorld Canada, InfoWorld Canada, NetworkWorld Canada, WebWorld; **Chile:** Computerworld Chile, PC World Chile; **Colombia:** Computerworld Colombia, PC World Colombia; **Costa Rica:** PC World Centro America; **The Czech and Slovak Republics:** Computerworld Czechoslovakia, internet 4U Czech, Macworld Czech Republic, PC World Czechoslovakia; **Denmark:** Client Server Denmark, Communications World Danmark, Computerworld Danmark, Macworld Danmark, PC World Danmark, Windows Special Danmark, Techworld Danmark; **Dominican Republic:** PC World Republica Dominicana; **Ecuador:** PC World Ecuador; **Egypt:** Computerworld Middle East, PC World Middle East; **El Salvador:** PC World Centro America; **Finland:** MikroPC, Tietoverkko, Tietoviikko; **France:** Distributique, Hebdo, Info PC, Le Monde Informatique, L M I Magazine, Macworld, Reseaux & Telecoms, VAR & SSII Magazine, WebMaster France; **Germany:** Computer Partner, Computerwoche, Computerwoche Extra, Computerwoche FOCUS, Global Online, Macwelt, PC Welt, PC Welt Special Issue; **Greece:** Amiga Computing, GamePro Greece; **Guatemala:** PC World Centro America; **Honduras:** PC World Centro America; **Hong Kong:** Computerworld Hong Kong, PC World Hong Kong, Publish in Asia; **Hungary:** ABCD CD-ROM, Computerworld Szamitastechnika, INteRNeTTO Hungary, PC World Hungary, PC-X Magazin Hungary; **Iceland:** Tolvuheimur PC World Island; **India:** CW Premier 200 Year Book India, Information Communications World, Information Systems Computerworld, Macworld India, PC World India, Publish in Asia; **Indonesia:** InfoKomputer PC World, Komputek Computerworld, Publish in Asia; **Ireland:** ComputerScope, InfoLive Ireland, PC Live!; **Israel:** Macworld Israel, People & Computers/Computerworld; **Italy:** Computerworld Italia, Macworld Italia, Networking Italia, PC World Italia; **Japan:** DTP World, HP Open World Japan, Macworld Japan, Nikkei Personal Computing, OS/2 World Japan, SunWorld Japan, Windows NT World, Windows World Japan; **Kenya:** PC World East African; **Korea:** Hi-Tech Information, Macworld Korea, PC World Korea; **Latvia:** PC World DatorPasaule Latvia; **Macedonia:** PC World Macedonia; **Malaysia:** Computerworld Malaysia, PC World Malaysia, Publish in Asia; **Malta:** PC World Malta; **Mexico:** Computerworld Mexico, Macworld Mexico, PC World Mexico; **Myanmar:** PC World Myanmar; **Netherlands:** Computer! Totaal, InfoWorld Netherlands, LAN Magazine, LAN World Buyers Guide, Net, Macworld Netherlands, Totaal! Beurskrant Netherlands, WebWereld; **New Zealand:** Absolute Beginners Guide and Plain & Simple Series, Computer Buyer, Computer Industry Directory, Computerworld New Zealand, MTB, Network World, PC World New Zealand; **Nicaragua:** PC World Centro America; **Norway:** CAD/CAM World Norge, Computerworld Norge, CW Rapport, Datamagasinet, Financial Rapport, Kursguide Norge, Macworld Norge, Multimediaworld World Norway, PC World Ekspress Norge, PC World Nettverk, PC World Norge, PC World ProduktGuide Norge; **Pakistan:** Computerworld Pakistan; **Panama:** PC World Panama; **People's Republic of China:** China Computer Users, China Computerworld, China Computerworld Daily, China InfoWorld, China Telecom World Weekly, Computer & Communication, Electronic Design China, Electronics Today, Electronics Weekly, Game Software, Network World China, PC World China, Popular Computer Week, Software Weekly, Software World, Telecom World; **Peru:** Computerworld Peru, PC World Profesional Peru, PC World SoHo Peru; **Philippines:** Click!, Computerworld Philippines, PC World Philippines, Publish in Asia; **Poland:** Computerworld Poland, Computerworld Special Report Poland, Cyber, Macworld Poland, Networld Poland, PC World Komputer; **Portugal:** Cerebro/PC World, Computerworld/Correio Informático, Dealer World Portugal, Mac*In/PC*In Portugal, Multimedia World; **Puerto Rico:** PC World Puerto Rico; **Romania:** Computerworld Romania, PC World Romania, Telecom Romania; **Russia:** CIO Russia, Computerworld Russia, Mir PK, Publish, Seti; **Singapore:** Computerworld Singapore, PC World Singapore, Publish in Asia; **Slovenia:** Monitor; **South Africa:** Computing SA, Network World SA, PC World South Africa; **Spain:** Communicaciones World España, Computerworld España, Dealer World España, Macworld España, PC World España; **Sri Lanka:** Infolink PC World; **Sweden:** CAP&Design, Computer Sweden, Corporate Computing Sweden, Internetworld Sweden, it.branschen, Macworld Sweden, MaxiData Sweden, MikroDatorn, Nätverk & Kommunikation, PCaktiv, PC World Sweden, PC Windows World Sweden; **Switzerland:** Computerworld Schweiz, Macworld Schweiz, PCtip; **Taiwan:** Computerworld Taiwan, Macworld Taiwan, NEW ViSiON/Publish, PC World Taiwan, Windows World Taiwan; **Thailand:** Publish in Asia, Thai Computerworld; **Turkey:** Computerworld Turkiye, Macworld Turkiye, Network World Turkiye, PC World Turkiye; **Ukraine:** Computerworld Kiev, Multimedia World Ukraine, PC World Ukraine; **United Kingdom:** Acorn User UK, Amiga Action UK, Amiga Computing UK, Apple Talk UK, Macworld, Parents and Computers UK, PC Advisor, PC Home, PowerPC Business, PSX Pro, The WEB; **United States:** Cable in the Classroom, CIO Magazine, Computerworld, Computerworld Client/Server Journal, DOS World, Federal Computer Week, GamePro Magazine, InfoWorld, JavaWorld, Macworld, NetscapeWorld, Network World, PC Games, PC World, Publish, Video Event, SunWorld Online, THE WEB Magazine, WebMaster and WEBNOW; **Uruguay:** InfoWorld Uruguay; **Venezuela:** Computerworld Venezuela, PC World Venezuela; and **Vietnam:** PC World Vietnam.

Advertiser Index A-Z

Get more information—circle the appropriate number on the reader service card.

Reader service number		Page
-	Acer America Corporation	106-107
-	Acer Peripherals	41
-	Adaptec Inc.	18
3	ADI Systems	54
12	Adobe Systems Inc.	153
16	Advanced Micro Devices	32-33
14	AEC	323
38	Alaris Inc.	315
9	ALR	31
17	APC	73
45	APC	112-113
8	ArcSoft, Inc.	397
20	ArtMedia USA-Pacific Technology	390
-	AST Computers	69
-	AST Computers	100-101
-	AST Servers	111
25	ATI Technologies	36
39	Bestware	148
91	Caere Corporation	335
-	Canon Computer Systems	2-3
-	Chevrolet Monte Carlo	15
-	Cirque Corp.	213
33	CMOS	206-207
-	Compaq Computer Corporation	10-11
-	Compaq Computer Corporation	188-189
-	Compaq Direct Plus	262-263
44	Computer Discount Warehouse	168-169
41	Computer Discount Warehouse	170-171
58	Computer Discount Warehouse	172-173
68	Computer Discount Warehouse	174-175
46	Computer Discount Warehouse	369
65	Computer Discount Warehouse	370-371
-	Corel Corporation	4-5
-	Corel Corporation	307
49	Costech Technologies, Inc.	50
54	Creative Labs Inc.	75
59	Creative Labs Inc.	77
69	Creative Labs Inc.	79
56	Crucial Technology	353
74	Cybermax	34-35
81	Dataviz, Inc.	127
80	Dataviz, Inc.	321
-	Dell Computer Corp.	C5-C8
-	Dell Computer Corp.	42-43
-	Dell Computer Corp.	142-143
-	Dell Computer Corp.	149
-	Dell Computer Corp.	210-211
-	Dell Computer Corp.	220-221
-	Dell Computer Corp.	230-231
-	Dell Computer Corp.	340-341
71	Deneba	235
147	Dirt Cheap Drives	360
-	Dodge Caravan	249
87	DTK	191
84	DTK	343
85	EarthLink	349
88	EIKI	312
95	Epson America, Inc.	116-117
92	Epson America, Inc.	302-303
-	Everex Systems, Inc.	167
-	EXABYTE/Eagle Division	277
100	Fujitsu Computer Products of America	254-255
103	Fujitsu PC Corp.	56-57
-	Gateway 2000	81-96
97	Hayes Microcomputer Products	119
98	Helix Software	183
-	Hewlett-Packard	161
-	Hewlett-Packard	163
-	HP Office Jet	185
-	HP Printer Supplies	24
-	HP Printer Supplies	26
-	HP Printer Supplies	27
-	Hughes Network Systems	274
110	Hyundai Electronics America	285
-	IBM Corporation	120-121
-	IBM Corporation	123
-	IBM Direct Plus	181
-	Imation	355
112	INFO IMAGING	40
-	Integrated Technology	305
-	Intel	124-125
104	ITT Sheraton	332
113	ITT Sheraton	333
-	Jeep Cherokee	115
170	KDS	273
123	Keystone Learning Systems	322
128	Kingston Technology	288
-	LA TRADE	372
176	LA Vision	399
96	LG Electronics U.S.A., Inc.	44
143	Matrox Graphics, Inc.	46-47
142	MGI Software Corp.	328
149	Micron Electronics	9
-	Micron Electronics	193-202
160	Micron Electronics	266-267
-	Microtek Lab, Inc.	337
-	Microwarehouse	376-377
155	Midwest Computer Works	375
57	MindSpring	219
-	Minolta	38
-	Minolta	39
153	Minolta Peripheral Products	261
-	Mita	275
154	Mitsubishi Electronics America	309
-	Monsoon	145
180	NEC	28-29
158	NEC	292-295
205	NEC Monitors	C2-P1
-	Nomai	398
-	Novell	12-13
-	Novell	70-71
-	NRI Schools	319
121	Oldsmobile Intrigue	105
247	Optiquest	165
166	Panasonic	65
195	PC America	368
165	PC Connection	358-359
183	PC MALL	366-367
167	PC Universe	373
172	PC World Online	278
129	PCs Compleat/Comp USA Direct	361-365
175	Peachtree Software	280
-	Philips Electronics	109
181	Philips Electronics	209
212	PKWARE	30
179	Polaroid Corporation	296
193	PowerQuest	51
191	PowerQuest	327
196	PowerQuest	329
192	Premio Computers	265
151	Princeton Graphic Systems	16-17
184	ProGen Systems	48
186	Prolux	301
215	Puma Technology	215
-	Quantex	129-134
197	Sampo	339
209	Sanyo	311
213	Sceptre Technologies, Inc.	324-325
226	Seanix	98-99
130	SegaSoft	316-317
188	Seiko Instruments	126
207	Shinho	182
-	Sony Electronics, Inc.	147
-	Sony ITA Direct	52-53
-	Sony-Convergence	66-67
253	SPSS, Inc.	345
208	State of the Art	187
210	STB Systems	286
232	Syncronys SoftCorp	347
221	Telecommuting and Home Office Expo	97
222	Televideo Inc.	290
227	Toray Marketing & Sales	282
228	TOSHIBA	214
234	Toshiba America Electronic Components Inc.	217
240	Twinhead Corporation	279
-	Umax PC	237-240
250	UMAX Technologies	253
-	U.S. Robotics	223-226
241	USA Flex	374
260	Value Web	326
239	Viagrafix	351
224	ViewSonic	22-23
252	ViewSonic	299
251	Western Digital	251
254	WinBook	20-21
-	Xerox Corporation	158-159

Advertiser Index by Product Category

Get more information—circle the appropriate number on the reader service card.

HARDWARE

Boards/Cards/Chips

Reader service number		Page
16	Advanced Micro Devices	32-33
25	ATI Technologies	36
54	Creative Labs Inc.	75
59	Creative Labs Inc.	77
69	Creative Labs Inc.	79
56	Crucial Technology	353
-	Intel	124-125
128	Kingston Technology	288
143	Matrox Graphics, Inc.	46-47
210	STB Systems	286

Communication

Reader service number		Page
-	Canon Computer Systems	2-3
97	Hayes Microcomputer Products	119
112	INFO IMAGING	40
-	U.S. Robotics	223-226

Desktop Computers

Reader service number		Page
33	CMOS	206-207
-	Dell Computer Corp.	C5-C8
-	Dell Computer Corp.	42-43
-	Dell Computer Corp.	142-143
-	Dell Computer Corp.	149
-	Dell Computer Corp.	210-211
-	Dell Computer Corp.	220-221
-	Dell Computer Corp.	230-231
-	Dell Computer Corp.	340-341
87	DTK	191
84	DTK	343
-	Gateway 2000	81-96
-	Hewlett-Packard	161
-	Hewlett-Packard	163
149	Micron Electronics	9
-	Micron Electronics	193-202
160	Micron Electronics	266-267
-	Microwarehouse	376-377
180	NEC	28-29
158	NEC	292-295
181	Philips Electronics	209
192	Premio Computers	265
184	ProGen Systems	48
-	Quantex	129-134
226	Seanix	98-99
-	Sony ITA Direct	52-53
-	Umax PC	237-240
241	USA Flex	374

Desktop Publishing

Reader service number		Page
-	Compaq Computer Corporation	10-11
-	Compaq Direct Plus	262-263
74	Cybermax	34-35
81	Dataviz, Inc.	127
-	IBM Direct Plus	181
-	Umax PC	237-240

File Servers

Reader service number		Page
9	ALR	31
-	AST Servers	111
160	Micron Electronics	266-267

Laptop/Notebook

Reader service number		Page
-	AST Computers	69
-	Everex Systems, Inc.	167
103	Fujitsu PC Corp.	56-57
-	Gateway 2000	81-96
-	Micron Electronics	193-202
213	Sceptre Technologies, Inc.	324-325
-	Sony-Convergence	66-67
228	TOSHIBA	214
240	Twinhead Corporation	279
254	WinBook	20-21

Local Area Networks

Reader service number		Page
33	CMOS	206-207

Monitors/Displays

Reader service number		Page
-	Acer Peripherals	41
3	ADI Systems	54
20	ArtMedia USA-Pacific Technology	390
-	Compaq Computer Corporation	188-189
110	Hyundai Electronics America	285
170	KDS	273

Reader service number — Page

96 LG Electronics U.S.A., Inc. 44
154 Mitsubishi Electronics America. 309
205 NEC Monitors C2-P1
247 Optiquest 165
166 Panasonic 65
151 Princeton Graphic Systems 16-17
197 Sampo 339
213 Sceptre Technologies, Inc. 324-325
207 Shinho 182
222 Televideo Inc. 290
234 Toshiba America Electronic Components Inc. 217
224 ViewSonic 22-23

Motherboards
- AST Computers 100-101

Multimedia
88 EIKI 312
176 LA Vision 399
142 MGI Software Corp. 328
179 Polaroid Corporation 296
186 Prolux 301
197 Sampo 339
209 Sanyo. 311
227 Toray Marketing & Sales 282
252 ViewSonic 299

Other
- Acer America Corporation 106-107
92 Epson America, Inc. 302-303
- IBM Corporation 120-121
- IBM Corporation 123
- Integrated Technology 305
- Sony Electronics, Inc. 147

Peripherals/Sharing Devices
- Adaptec Inc. 18
88 EIKI 312

Power/Protection
17 APC 73
45 APC 112-113

Printers/Plotters
- Canon Computer Systems 2-3
95 Epson America, Inc. 116-117
100 Fujitsu Computer Products of America 254-255
- HP Office Jet 185
153 Minolta Peripheral Products 261
- Mita 275
188 Seiko Instruments 126
- Xerox Corporation 158-159

Scanners/Digitizers
- Microtek Lab, Inc. 337
- Minolta 39
250 UMAX Technologies 253

Storage/Backup Devices
147 Dirt Cheap Drives 360
- EXABYTE/Eagle Division 277
- Imation 355
- Nomai 398
- Philips Electronics 109
227 Toray Marketing & Sales 282
251 Western Digital 251

Reader service number — Page

SOFTWARE

Accounting/Financial
39 Bestware 148
175 Peachtree Software 280
208 State of the Art 187

CAD/CAM
71 Deneba 235
239 Viagrafix 351

Communications/Fax/Modems
215 Puma Technology 215
260 Value Web 326

Data Conversion
80 Dataviz, Inc. 321

Desktop Publishing
12 Adobe Systems Inc. 153

Entertainment
130 SegaSoft 316-317

Management
195 PC America 368

Multimedia
176 LA Vision 399
130 SegaSoft 316-317

Other
8 ArcSoft, Inc. 397

Presentation Graphics
49 Costech Technologies, Inc. 50

Schedule Software
14 AEC 323

Software Suites
- Corel Corporation 4-5
- Corel Corporation 307
98 Helix Software 183

Spreadsheets/Templates/Forms
91 Caere Corporation 335

Statistics
253 SPSS, Inc. 345

Utilities
14 AEC 323
212 PKWARE 30
193 PowerQuest 51
191 PowerQuest 327
196 PowerQuest 329
232 Syncronys SoftCorp 347

Video
38 Alaris Inc. 315
123 Keystone Learning Systems 322

Web Authoring Tools
260 Value Web 326

Windows
71 Deneba 235
175 Peachtree Software 280
212 PKWARE 30

Word Processing/Aids
- Corel Corporation 4-5
- Corel Corporation 307

MISCELLANEOUS

Audio Systems
- Monsoon 145

Automobiles
- Chevrolet Monte Carlo 15
- Dodge Caravan 249
- Jeep Cherokee 115
121 Oldsmobile Intrigue 105

Reader service number — Page

Hotels
104 ITT Sheraton 332
113 ITT Sheraton 333

Mail Order
44 Computer Discount Warehouse 168-169
41 Computer Discount Warehouse 170-171
58 Computer Discount Warehouse 172-173
68 Computer Discount Warehouse 174-175
46 Computer Discount Warehouse 369
65 Computer Discount Warehouse 370-371
147 Dirt Cheap Drives 360
- LA TRADE 372
155 Midwest Computer Works 375
- NRI Schools 319
165 PC Connection 358-359
183 PC MALL 366-367
167 PC Universe 373
129 PCs Compleat/Comp USA Direct 361-365

Online Services
85 EarthLink 349
- Hughes Network Systems 274
57 MindSpring 219
172 PC World Online 278

Other
- Cirque Corp. 213
- Minolta 38
- Novell 12-13
- Novell 70-71

Supplies
- HP Printer Supplies 24
- HP Printer Supplies 26
- HP Printer Supplies 27

Trade Shows
221 Telecommuting and Home Office Expo 97

Training
123 Keystone Learning Systems 322
- NRI Schools 319

Products Featured in Editorial

Get more information—circle the appropriate number on the reader service card.

Accounting Software
647 MYOB Premier, Best!Ware. 178
648 Peachtree Complete Plus Time & Billing, Peachtree Software 179
- Quickbooks Pro 5.0, Intuit 179
649 Time & Profit for Windows 2.0, BytePro. 179

Anti-Virus
754 Dr. Solomon's Anti-Virus Toolkit, ... 150
754 Dr. Solomon's Anti-Virus 150
749 Norton AntiVirus, Symantec. 140

Reader service number — Page

Audio Adapter
763 StreetSound, Street Technologies 104

Business Planning Software
650 BizPlan Builder, Jian Software 180
651 Business Plan Pro 2.0, Palo Alto Software 180
652 Plan Write 4.0, Business Resource Software 180
652 Plan Write Expert Edition, Business Resource Software. 180
653 Smart Business Plan 5.22, American Institute for Financial Research 184

Carrying Case
771 Safecase, Tumi. 114

CD-Recordable Drive
779 Easy CD Creator Deluxe, Adaptec. 123

Contact Managers
654 Act! for Windows 3.0, Symantec 184
655 Ecco Pro 4.01, NetManage 184
656 GoldMine 3.2 for Windows 95/NT 4.0, ... 185
657 Lotus Organizer 97, ... 186
658 Maximizer 97 for Windows 95 186

Database
777 Corel Paradox 8 128

Desktop Computers
760 MVP P V C2-233, DirectWave 102
683 Acma EXP 2000, ... 244
787 AST Bravo MS-6300 63
684 CLR Infinity PT5-A 200MMX 244
700 CyberMax Intel Promax 3 P200 MMX 256
693 CyberMax Power Max 256
687 Dell Dimension M200a 256
788 Dell Dimension XPS D-266 63
668 Dell Dimension XPS H266 244
669 Dell Dimension XPS M233S, ... 244
611 Dell Dimension XPS M233s, ... 318
674 Dell Optiplex GX Pro 200. 244
671 Dell Optiplex Gxi 5200M. 244
681 Digitron PS4000 244
679 DTK Quin-55M/PM233 244
612 Gateway G5-200M 318
672 Gateway 2000 G5-233 244
670 Gateway 2000 G6-233. 244
680 Gateway 2000 G6-266XL 244
789 Gateway 2000 G6 300XL 63
689 Gateway 2000 P5-166 M. 256
685 HP Vectra VA 6/200 MT. 244
- IBM PC 365 244
699 Kingdom 6x86 P166+ Super Value. 256

Reader service number		Page
696	Kingdom Kingdom Pentium MMX 200 Home & Office	256
701	Micro Express MicroFlex-686/P200+LC	256
703	Micro Express Micro Flex-PCI/5200	256
695	Micro Express Micro Flex-PR/233	256
692	Micro Express MicroFlex-K5/5166	256
698	Micro Express MicroFlex-P5/MMX	256
613	Micron Millennia MME	318
615	Micron Millennia XRU	318
675	National Microcomputers Expert Pro II	244
790	NEC Direction SPL 300	63
702	Nexar MMX P-200	256
682	Nova K6-200TX	244
704	Polywell Poly 500 MXB P/200	256
691	Polywell Poly 500 QX	256
678	Premio FX2 Shadowhawk 266	244
697	ProGen Atlas X 200	256
706	ProGen Discover MPEG P166	256
688	Quantex QP5/200 SM1 MMX	256
690	Quantex QP6/200 PD-4	256
614	Quantex QP6/200 SM-2	318
677	Quantex QP6/200 SM-4	244
673	Quantex QP6/233 SM-3	244
773	QuarkXPress 4.0	118
705	Royal Computer Synergy Best Buy	256
762	Seanix Baby Grand	104
676	Sys Technology Performance Pro 266A	244
686	Total Peripherals Archer 2000A	244
694	USA Flex Flex Performer	256
764	VAIO PCG-707C, Sony Electronics	104
	DVD	
769	Diamond Maximum DVD Kit	110
	Entertainment/Games	
634	NHL Powerplay '98, Virgin Interactive Entertainment	314
	Graphics Boards	
601	ATI 3D Pro Turbo PC2TV	212
603	ATI 3D Xpression+ PC2TV	212
605	Diamond Stealth 3D 2000 Pro	216
602	Diamond Stealth 3D 3000	212
609	Hercules Stingray 128/3D	222
606	Hercules Terminator 3D/DX	218
608	Matrox Mystique 220 Business	218
610	Number Nine Reality 772	222
772	Number Nine Revolution 3D	114
604	STB Nitro 3D	212
607	STB Velocity 3D	218
	HTML Editors	
	EditPad 3.11, JG Soft	229
727	FlexSite 2.5, Lincoln Beach Software	236
774	FrontPage 98, Microsoft	122
729	Hippie 4.10, Trout Software	236
730	HoTMetal Pro, SoftQuad	236
734	Paint Shop Pro 4.12, Jasc Software	236
775	Visual Page, Symantec Corp.	122
630	WebResume, Pacifica Internet Authoring Tools	313
	Human Resources Management Software	
665	Descriptions Now! Version 3.01, Knowledge Point	192
666	Employee Manual Maker 3.0, Jian Software	192
667	Performance Now! Version 3.02, Knowledge Point	192
746	Policies Now!, Knowledge Point	192
664	Review Writer, Avantos Performance Systems	192
	Image Editing	
733	Lview Pro 2.0, Mmedia Research	236
778	PhotoDeluxe 2.0, Adobe Systems	128
735	Photo-Paint 7 Plus, Corel	236
635	PrintMaster Gold Deluxe 4.0, Mindscape	314
	Input Device	
767	GyroMouse, Diamond Multimedia	108
	Internet Filters	
785	Cyber Snoop, Pearl Software	80
755	CyberPatrol, MicroSystems Software	80
756	Cybersitter, Solid Oak Software	80
786	Internet WatchDog, Charles River Media	80
757	Net Nanny 3.1	80
758	Net Shepherd 2.0	80
759	SurfWatch 1.6	80
	Internet Utilities	
731	Internet FastFind, Symantec	236
736	WebSeeker 3.2, ForeFront	236
	Modems	
645	Diamond Multimedia SupraExpress 56e	291
638	Diamond Multimedia SupraSonic 336 V+	291
641	Logicode Quicktel II-E with LED Array	291
642	Microcom OfficePorte Voice 33.6	291
646	Motorola ISG ModemSurfr 56K Desktop Data/Fax Modem Model 3456	291
640	NewCom 33600efx	291
634	Practical Peripherals PC336LCD	291
637	U.S. Robotics Courier V.Everything 33.6	291
644	U.S. Robotics Sportster 56K Faxmodem External Model 1786	291
639	Zoom Fax/Modem V.34X Plus	291
	Monitors	
628	ADI MicroScan 4P	287
621	Dell UltraScan 800HS	287
623	Gateway 2000 CrystalScan 500	287
626	Hansol Mazellan 15PX	287
624	Hitachi SuperScan Pro 500	287
620	Mitsubishi Diamond Scan 15VX	287
625	Nokia 449Xa MultiGraph	287
619	Panasonic Panasync Pro P15	287
622	Princeton Graphics Systems Eo 50	287
627	Smile CB-6536SL	287
	Mouse Driver	
636	Flywheel, Planet Crafters	320
	Notebook Computers	
726	Acer AcerNote Light 382	268
722	AMS TravelPro 105CS	268
711	ARM ArmNote TS97MX	268
718	Compaq Armada 1520DM	268
717	CTX EZBook 750MS	268
708	CTX EzBook 764MT	268
710	Dell Latitude LM M166ST	268
761	Digital HiNote Ultra 2000	103
720	Fujitsu LifeBook 420D	268
725	Fujitsu LifeBook 435Dx	268
713	Gateway 2000 Gateway Solo 9100-XL	268
723	Gateway 2000 Solo 2100 S5-120	268
715	Gateway 2000 Solo 2100 S5-150	268
714	Gateway 2000 Solo 2200 S5-166	268
781	Gateway 2000 Solo 9100-233	68
–	IBM ThinkPad 770	68
709	Micron Transport XKE P166 A	268
782	NEC Versa 6230	68
783	Quantex Meridian H233	68
724	Toshiba Satellite 200CDS	268
719	Toshiba Satellite Pro 430CDS	268
784	Toshiba Tecra 750CDT	68
712	Transmonde Vibrant 166Tmx	268
707	WinBook FX	268
716	WinBook LM	268
721	WinBook XP5 Pro P150	268
	Presentation Tool	
776	NetMC 1.5, NEC Systems Laboratory	122
	Printers	
765	Alps MD-1000	108
738	Brother HL-720	283
742	Canon BJC-4300	283
766	Color Jetprinter, Lexmark International	108
–	Epson Stylus Color 600	283
745	HP DeskJet 672C	283
743	HP DeskJet 694C	283
744	HP DeskJet 820Cse	283
737	HP LaserJet 6Lse	283
739	NEC SuperScript 660plus	283
740	NEC SuperScript 860	283
741	Panasonic KX-P6500	283
	Project Management Software	
660	Microsoft Project 4.1	190
661	Milestones, Etc. 5.0, Kidasa Software	190
662	Suretrak Project Manager 2.0, Primavera Systems	190
663	TurboProject 1.0, International Microcomputer Software	190
	Projector-LCD	
770	Sony CPJ-D500 LCD Data Projector	114
	Reference	
633	Complete National Geographic, Mindscape	314
780	Merriam-Webster's Collegiate Dictionary Deluxe Audio Edition	126
–	Microsoft Bookshelf 98	314
629	TOPO Interactive Map, Wildflower Productions	313
	Scan Converter	
768	PC/TV AirLink, AITech International	110
	Scanner	
632	EasyPhoto SmartPage Pro, Storm Technology	313
	Shareware	
	DiskData, Digital Information Gallery	141
–	RegClean, Microsoft	141
–	Safety Net Pro, CT Software	141
–	SiSoft Sandra	141
–	Windows 95 Registry FAQ	141
	Software Suite	
659	Office 97 Small Business Edition, Microsoft	186
	Utilities	
751	ConfigSafe, Artisoft	141
618	First Aid 98, CyberMedia	331
749	Norton Utilities 2.0 for Windows 95, Symantec	140
750	Nuts & Bolts, Helix Software	140
752	Oil Change, CyberMedia	144
748	Partition Magic 3.0, PowerQuest	139
747	PartitionIt, Quarterdeck	139
753	PCTuneUP, Quarterdeck	144
	Videoconferencing	
616	Kinko's Videoconferencing	50
	Web Site Management	
732	Linkbot 3.0, Tetranet Software	236

For every good reason to capture still images & motion video onto your PC

Impact - WOW your clients and your boss with amazing multimedia presentations

Bragging Rights - email some shots of your skydiving videotape to the grandkids

Documentation - attach video stills of the flood damage to your insurance claim

Blackmail - before you burn the bachelor-party video, stash away some of its more "choice" moments

Preservation - keep your marriage and your job - videoconference with the office while you relax poolside on vacation

Persuasion - your husband insists he doesn't need to see a snoring specialist - see if the people who visit his home page agree

Reinforcement - collect news clips on global warming for your upcoming address to the United Nations

Analysis - compare your golf swing today with your swing from last Spring

Posterity - preserve images of your kids now, so when they become teenagers you can remind yourself of how sweet they once were

Surveillance - monitor the cookie jar - from midnight to 6 am

There's one perfect solution

ZIPSHOT®

For PC Parallel Port

Introducing Zipshot - It makes capturing images and video from your TV, VCR, camcorder or digital camera a cinch.

Unlike other capture devices, ArcSoft's "Zip-Along™" technology means no more plugging, unplugging and rebooting. Just connect Zipshot to your PC's parallel port - along with your printer and other parallel devices - attach your video source and you're ready to capture. In seconds you've got crisp, clear, full color stills in resolutions of up to 1600x1200 pixels.

Better yet, try something totally cool - save motion video clips as AVI files to enhance your business presentations or spice up your email.

Zipshot is TWAIN-compliant and supports most popular file formats. Plus, it comes with seamlessly integrated easy-to-use software.

User-Friendly Interface

Diagram of Connections and Printer Pass-Thru

Hundreds of Dollars **FREE** Software Included!

- ArcSoft PhotoFantasy®
- ArcSoft PhotoPrinter®
- ArcSoft PhotoImpression®
- ArcSoft Multimedia EMail™
- Video-Teleconferencing Software

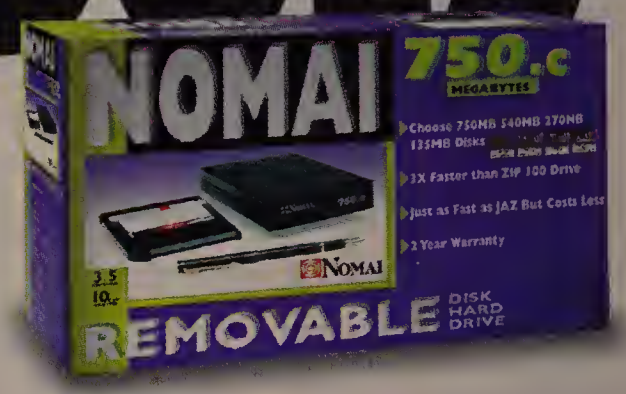
Check out: www.zipshot.com

Or Call 1.800.762.8657

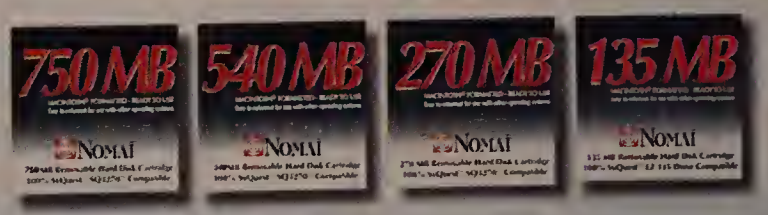
ArcSoft

Circle 8 on reader service card

NOMAI™ DOES Zip™ & Jaz™ Don't



While Zip 100 and Jaz are each stuck with one disk capacity, the Nomai 750.c drive offers multiple media options. The Nomai 750 uses Nomai or SyQuest® brand 135MB and 270MB disks, as well as, Nomai 540MB and 750MB disks.



- **The Nomai 750.c is just as fast as Jaz (10ms access time)**
- **The Nomai 750.c is at least 3X faster than Zip 100**
- **Only Nomai 750.c reads and writes 4 different removable media**
- **Available in internal & external SCSI or external parallel option**
- **Easy Plug `n Play external or 5-step internal installation**
- **Other options include SCSI dock, SCSI cards, or parallel kit**

$249
INTERNAL
$299 EXTERNAL

With 750MB disk included!
Call a distributor below, or Nomai, for reseller opportunities in your area.
Pricing and specifications subject to change without notice.

Microsoft® Windows®95 Compatible

Mac OS

NOMAI™
www.nomai.com

COMPUSA THE COMPUTER SUPERSTORE	TigerDirect	The PC Zone Your Catalog SuperStore	9 TO 5 COMPUTER SUPPLY DISTRIBUTORS "FAMILY OWNED AND OPERATED"	T zone
1-800-COMPUSA	1-800-888-4437	1-800-416-9663	1-800-334-3280	1-408-733-9920
NCA Computer Products	ELECTRONICS BOUTIQUE	DATAVISION "The Intelligent Superstore"	RCS COMPUTER EXPERIENCE	UNPLUG•IT
1-510-841-9091	1-800-800-0032	1-888-888-2087	1-212-949-6935	1-212-687-1539

NOMAI USA Toll Free 1-888-99-NOMAI. Call for distributor and reseller opportunities. All trademarks are properties of their respective companies. 87GDA

Breakthrough the static world of still images

Let FULL SCREEN VIDEO, & CD AUDIO Dazzle™ You

The World's First ever personal MPEG Recorders

DAZZLE PICTURE & LIVE VIDEO

Charge your PC with the excitement of movies! Using the latest MPEG technology we have created the world's first true digital adapters, Dazzle™, an external parallel port plug-in adapter (with a pass-thru printer port) & Snazzi™, an internal PCI add-in card, that record, edit, and transmit full screen video, CD quality audio & high resolution snapshots (1600 x 1200). MPEG is the same technology used by the latest DVD players & endorsed by "biggies" such as Microsoft & Sony. In fact, since it is the only video compression format supported by Windows 95 you can playback any MPEG recording on any PC without special hardware. And because MPEG crunches video 200x it occupies 33 times less space than Iomega's BUZ™. Try burning 8 hours of audio CDs or 72 mins. of video on one CD that you can playback on your video CD, CD ROM, or DVD players.

Our software bundle alone is worth buying our adapters: **Kai's Power Goo - Full Version** (create outlandish caricatures & cartoons), **Gryphon Morph** (morph your friend), **Adobe PhotoDeluxe v.2.0** (enhance/edit images), **Ulead Media Studio 2.5** (I frame professional editor - snazzi only), **Cinax Video Editor** (IBP home editor), **InterActual VideoSaver** (create video screen savers, includes Star Trek & other video clips), **Video Control** (send photo or video e-mail), **VDO Phone** (Video conferencing), **CeQuadrat WINONCD 3.0** (create video CD's), **Astound Studio M** (create multimedia presentations).

	Snapshots	Goo SE	Morph	PhotoDeluxe	Digital Video Capture	CD Audio	Home Editor	Color Preview	S-Video In	Parallel Port Pass Thru	Video Screen Savers	Internet Video	Vide Conferencing	Studio M	Ulead Prof. Editor	CeQuadrat	Output to VCR	COST
Snappy™	✔	✔	✔	✔	-	-	-	-	-	-	-	-	-	-	-	-	-	$169
BUZ™ *	✔	-	-	-	-	✔	✔	✔	✔	NA	-	-	-	-	-	-	✔	$199
Dazzle™	✔	✔**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	-	-	-	$299
Snazzi™	✔	✔	✔	✔	✔	✔	✔	✔	✔	NA	✔	✔	✔	✔	✔	✔	✔	$399

* Based on preliminary specifications
** Full Version

Call Toll Free 1-888-436-4348

hotoDeluxe Adobe for you · MetaTools Kai's Power GOO SE · MORPH · CD PRESS Burn your CD's · Ulead Systems MediaStudio 2.5 · Includes VDOPhone Internet · VIDEOSAVER · Astound

L.A. Vision, 1867 Whipple Road, Hayward, CA 94544 • Tel: (510) 476-1300 • Fax: (510) 476-1313 • www.la-vision.com

azzi is a registered trademark of L.A. Vision. All other names are trademarks of their respective holders. ©1997 L.A. Vision. Bundled software subject to unannounced changes. Content of software bundle varies according to product configuration.

LAVISION

Circle 176 on reader service card

Speech Recognition: Now You're Talking!

TALK TO MY COMPUTER? I do it all the time, usually in words I can't print here. Dictate to my computer and have it recognize what I say? Until recently I'd have scoffed, "Forget it. That's Star Trek. It won't happen until well into the twenty-first century." But it just did.

For the last month or so, I've been talking to my machine in normal conversational rhythms (not . . . broken . . . speech . . . like . . . this), and it's been recognizing an acceptable percentage of what I say. The setup does miss at least 1 word in 20, and it sometimes produces outlandish howlers, but it's good enough to work as a relaxing antidote to the keyboard. Still, this breakthrough is just the beginning. With voice in our toolbox, we'll need to redefine our notions of what a computer interface should be.

Make no **mistake:** This borders on the amazing. We can **actually talk** to our computers with reasonable **success.**

TALK THE TALK

THE PRODUCT that led me to this epiphany, Dragon Systems' NaturallySpeaking, is the first broad-vocabulary continuous speech program I've tried that actually works. It's not perfect, but it can outpace even a pretty fair typist like me. I've used it more than once to generate first drafts of columns. And this kind of software will become more and more common. By the time you read this, IBM's similar Via Voice should be available, and vendors like Kurzweil are expected to follow with products of their own.

Make no mistake: This borders on the amazing. For 15 years the speech recognition partisans have been telling me workable products were just 2 or 3 years away; the unpleasant reality created a severe geek-who-cried-wolf situation. Now we can actually talk to our PCs with reasonable success, in part because their increasing speed and capacity overcome some long-standing problems through sheer brute force.

Still, my wish list has plenty of items. For one, the software can't punctuate sentences on its own. You have to dictate punctuation marks ("comma"), ending every sentence with "period." You can hardly complain, since executives used to do this back in the age of the Dictabelt, but having the program make a stab at punctuation would keep the train of thought moving down the track.

SPEAK AND SPELL

IT'S ALSO OBVIOUS that speech-driven computers need a new kind of interface, one not designed to be used with a mouse or other pointing device. If we're going to speak to our computers, we'll need a command-driven interface that's closer to the "do-what-I-mean" ideal.

Good as it is at recognizing words, the Dragon software demonstrates how limiting the current situation really is. To save a file, you say "click file" and then "click save." That's not horrible, but editing a block of text by voice or even just moving the cursor can be painfully complicated, largely because those processes are totally oriented toward mouse and keyboard.

In a command-driven system, fewer words might accomplish more. Commands that do specific things wouldn't have to be mapped to goofy key combinations like <Ctrl>-<Backspace>. Dragon has a "delete character left" command that should simply be "backspace." If Dragon could understand commands like "move up one paragraph, delete 'in fact', and save the file," it would work more smoothly.

Microsoft recently demonstrated an early prototype of a word processor that had virtually no visible user interface. The screen was largely devoid of buttons, bars, and gizmos. But when a demonstrator typed something like 'letter to Sam Houston', the program responded with the proper letterhead format, Sam's address piped in from a database, and all the right salutations.

That's only a beginning. There are other possibilities, like hybrid systems that meld speech and gesture. Take that backspace command: Maybe it should be on a handheld clicker, along with backword, backsentence, and backparagraph keys. Mixing speech with other means of control could lead to powerful solutions.

Talking to our computers calls for entirely new ways of interacting with them. Mice? Keyboards? Our grandkids may look at these devices the way we look at hand-cranked phones.

PC World *contributing editor Stephen Manes is a columnist for the* New York Times *and coauthor of* Gates: How Microsoft's Mogul Reinvented an Industry *(Touchstone/Simon & Schuster, 1994, 800/223-2348).* ■

IDG INTERNATIONAL DATA GROUP PC World™ (ISSN 0737-8939) is published monthly at $29.90 for one year (12 issues), $59.80 for two years (24 issues), $89.70 for three years (36 issues) by PC World Communications, Inc., 501 Second St. #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add $20 per year for Canada and Mexico; add $46 per year for airmail for all other countries. Canadian GST Registration #R124669680. Periodicals postage paid at San Francisco and additional mailing offices. Canada Post International Publications Mail Product, (Canadian Distribution) Sales Agreement No. 0463566. POSTMASTER: Send address changes to PC World, Subscription Dept., P.O. 8ox 55029, 8oulder, CO 80328-5029. Editorial and business offices: 501 Second St. #600, San Francisco, CA 94107, 415/243-0500. Copyright © 1997, PC World Communications, Inc. All rights reserved. The trademark PC World is owned by International Data Group and used under license by PC World Communications, Inc. PC World Top 20™, Top 20™, PC World Top 10™, Top 10™, PC World Top 100™, Top 100™, and Consumer Watch™ are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

PHOTOGRAPH: ERIK BUTLER

DELL DIMENSION® DESKTOPS FOR BUSINESS

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ Microsoft® Office 97 Small Business Edition plus Bookshelf 96 ◆ Microsoft Windows 95 ◆ Microsoft Mouse (MS IntelliMouse on XPS Systems) ◆ 2 Universal Serial Bus (USB) Ports ◆ 3 Year Limited Warranty† with 1 Year On-sit
Upgrades: ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $99. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ APC Back-UPS Pro 650, add $299. ◆ 3 yrs. On-site Ser

***NEW* DELL DIMENSION® XPS D300** 300MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY	***NEW* DELL DIMENSION XPS D266** 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D233** 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	**DELL DIMENSION XPS M233s** 233MHz PENTIUM® PROCESSOR **WITH MMX TECHNOLOGY**
Common features listed above plus: • 64MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1200HS Monitor (17.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 128MB SDRAM, add $499.*	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • *NEW* 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.*	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Velocity 4MB AGP Video Card* • AWE64 Value Sound Card • Altec Lansing ACS-90 Speakers ★ *Upgrade to an 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $99.*	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* Matrox Millennium II 4MB WRAM Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.* ★ *Upgrade to a 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*
$3499 **Business Lease°: $123/Mo.** Order Code #500909	**$2899** **Business Lease: $105/Mo.** Order Code #500908	**$2499** **Business Lease: $90/Mo.** Order Code #500907	**$2199** **Business Lease: $79/Mo.** Order Code #500906

OUR NEW 300MHz SYSTE
AND PRIC

DELL DIMENSION DESKTOPS FOR HOME

Common features: ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 24X Max§ Variable CD-ROM Drive ◆ *NEW* 56K Capable** U.S. Robotics x2 WinModem ◆ MS Home Essentials plus Best of Entertainment Pack ◆ Microsoft Windows 95 ◆ MS IntelliMouse ◆ 3 Year Limited Warranty with 1 Year On-site Service
Upgrades: ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3-Pak of Zip 100MB Cartridges, add $39. ◆ HP DeskJet 820Cse Color Printer, add $299.

***NEW* DELL DIMENSION XPS D300** 300MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D266** 266MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	***NEW* DELL DIMENSION XPS D233** 233MHz PENTIUM II PROCESSOR FEATURING MMX TECHNOLOGY	**DELL DIMENSION XPS M200s** 200MHz PENTIUM PROCESSOR **WITH MMX TECHNOLOGY**
Common features listed above plus: • 64MB SDRAM Memory • *NEW* 8.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • 1200HS Monitor (17.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • AWE64 Value Sound Card • Altec Lansing ACS-490 Full Dolby Surround Sound Speakers with Subwoofer • Iomega Zip 100MB Internal Drive with One Cartridge	Common features listed above plus: • 32MB SDRAM Memory • *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms) • *NEW* 1000TX Trinitron Monitor (15.9" v.i.s., .26dp) • *NEW* Matrox Millennium II 8MB WRAM Video Card^ • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-290 Speakers with Subwoofer • Iomega Zip 100MB Internal Drive with One Cartridge	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Ultra ATA Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Velocity 4MB AGP Video Card* • Integrated Yamaha Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to 64MB SDRAM, add $199.* ★ *Upgrade to Altec Lansing ACS-290 Speakers with Subwoofer, add $75.* ★ *Upgrade to 1000TX Trinitron Monitor (15.9" v.i.s., .26dp), add $99.*	Common features listed above plus: • 32MB SDRAM Memory • 4.3GB Hard Drive (9.5ms) • 1000LS Monitor (15.9" v.i.s.) • *NEW* STB Nitro 4MB EDO PCI Video Card • Sound Blaster 16 WaveSynth Wavetable Sound • Altec Lansing ACS-90 Speakers ★ *Upgrade to a 64MB SDRAM, add $199.* ★ *Upgrade to 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms), add $79.*
$3799 ***NEW* Personal Lease: $169/Mo.°Ø** Order Code #500904	**$2999** ***NEW* Personal Lease: $134/Mo.°Σ** Order Code #500903	**$2399** ***NEW* Personal Lease: $107/Mo.°∞** Order Code #500902	**$1999** ***NEW* Personal Lease: $89/Mo.°π** Order Code #500901

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

†Pricing is not discountable. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P. Attn: Warranty, One Dell Way, Round Rock, TX 78682. °Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. ∞ 20X Max./11X Min. §12X Max./8X Min. §24 Max./12X Min. **x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ††Advertised configuration varies from tested configuration. ^4MB Baseboard with a 4MB Upgrade Module. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

°Amount of monthly lease payment, based on 24-month lease from Dell Financial Services L.P., an independent entity; amount due prior to delivery: Ø$338; Σ$268; ∞$214; π$178 (amounts exclude taxes which may vary; for example, Hartford City, IN fees Ø$8.45); no security deposit required, subject to credit approval and availability. Lease terms subject to change.

Service
ice, add $99.

DELL DIMENSION M200a
200MHz PENTIUM PROCESSOR
WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 3Com 3C509B EtherLink III 10Mbit ISA Combo Card
- Iomega Zip 100MB Internal Drive with One Cartridge

★ *Upgrade to 32MB SDRAM, add $99.*
★ *Sound Blaster 16 PnP and Altec Lansing ACS-90 Speakers, add $89.*

$1799
Business Lease: $65/Mo.
Order Code #500905

SOFTWARE DESCRIPTIONS

MS Office 97 Small Business Edition (SBE) includes:
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

MS Home Essentials plus Best of Entertainment Pack (available on desktops only) includes:
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0
- TETRIS, Taipei, SkiFree, Dr. BlackJack and more.

DELL POWEREDGE SERVERS

Common features: ◆ 512KB Integrated L2 ECC Cache ◆ Integrated PCI Ultra-Wide SCSI-3 Controller ◆ Intel® Pro/100B PCI Ethernet Adapter ◆ Intel LANDesk® Server Manager v2.5x ◆ **3 Years Next Business Day On-site Service**

DELL® POWEREDGE® 2200 SERVER
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 64MB ECC EDO Memory (512MB Max)
- 4GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- 3Com Office Connect Hub 8-Port/TPC
- MS Windows NT® Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

$4749
Business Lease: $166/Mo.
Order Code #250081

DELL POWEREDGE 2200 SERVER
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory (512MB Max)
- 2GB Ultra-Wide SCSI-3 Hard Drive (27GB Max)
- 8X SCSI CD-ROM Drive
- MS Windows NT Server 4.0 (10 Client Access Licenses)
- 6 Drive Bays: 3 Hard Drive, 3 Removable Media
- 6 Expansion Slots: 3 PCI, 3 EISA

★ *APC Smart-UPS 700w Power Supply, add $399.*

$3749
Business Lease: $134/Mo.
Order Code #250085

EMS ARE BUILT FOR SPEED. ED TO FLY.

DELL LATITUDE NOTEBOOKS

Common features: ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts CD-ROM (20X Max°° Variable on LM M166ST or 12X Max^Ω Variable on LM M133ST), 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

DELL LATITUDE® LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 72MB EDO RAM
- *NEW* 4GB Hard Drive
- MS Office 97 Small Business Edition

★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*
★ *3Com Lan+ 33.6 Modem PC Card, add $299.*
★ *Dell Latitude LM Port Replicator, add $159.*

$3999‡
Business Lease: $141/Mo.
Order Code #800168

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB EDO RAM (72MB Max)
- 2.1GB Hard Drive
- Motorola 33.6 Fax Modem
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB EDO RAM, add $299.*
★ *Upgrade to a NEW 4GB Hard Drive, add $349.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Leather Carrying Case, add $99.*

$3499‡
Business Lease: $123/Mo.
Order Code #800169

DELL LATITUDE LM M166ST
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB EDO RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *NEW 56K Capable** x2 Modem, add $149.*
★ *Dell Latitude LM Port Replicator, add $159.*

$2899‡
Business Lease: $105/Mo.
Order Code #800140

***NEW* DELL LATITUDE LM M133ST**
133MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB EDO RAM (72MB Max)
- 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 24MB EDO RAM, add $99.*
★ *Upgrade to a 2.1GB Hard Drive, add $149.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Nylon Carrying Case, add $69.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *3Com 10Base-T Network Card, add $129.*

$2599‡
Business Lease: $94/Mo.
Order Code #800154

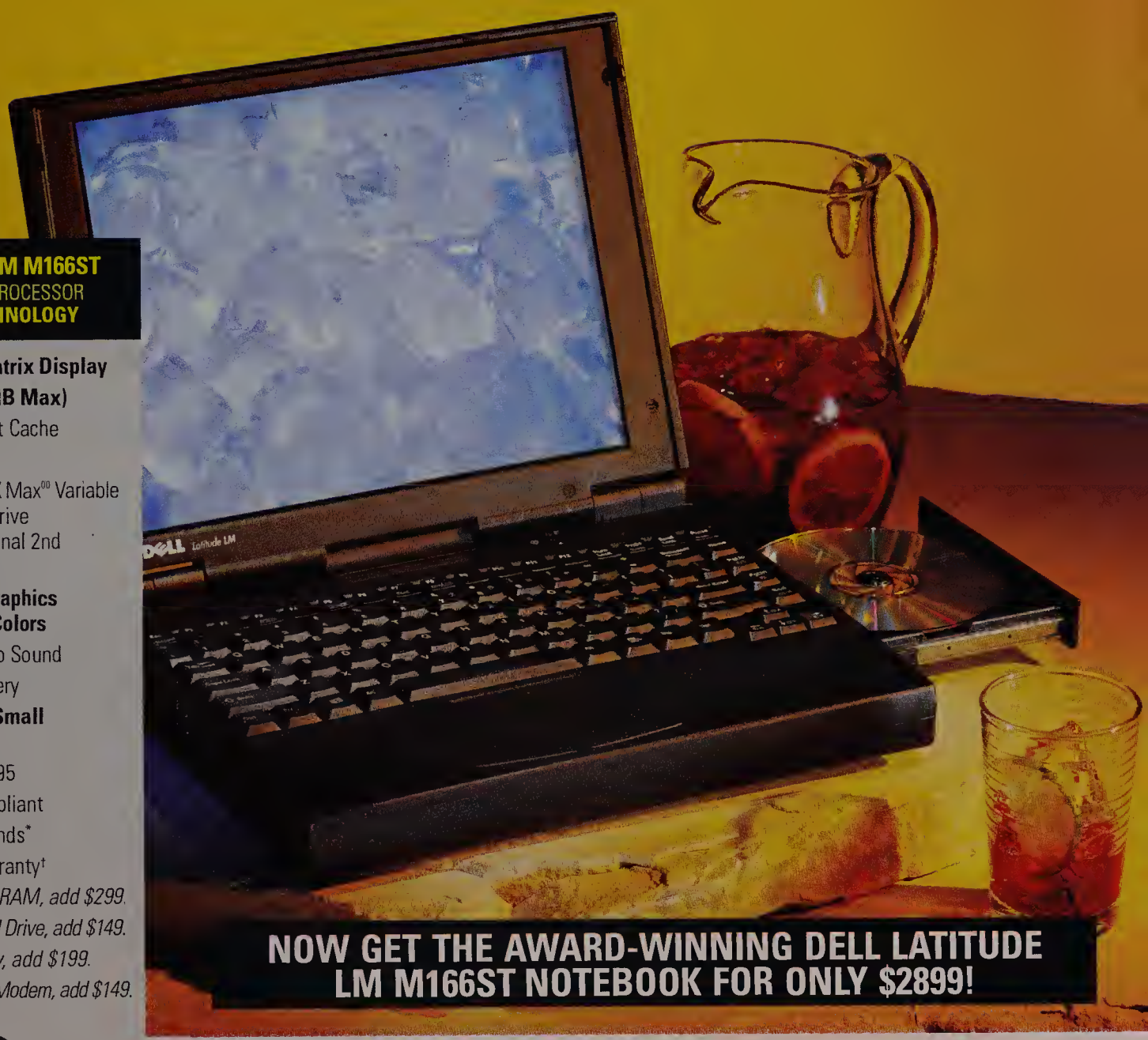
Call for details on Dell's Business Leasing and new Personal Leasing programs.

TO ORDER TOLL-FREE
800-417-3355
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03298

DELL®

QUENCH YOUR THIRST FOR POWER WITHOUT DRAINING YOUR WALLET.



NOW GET THE AWARD-WINNING DELL LATITUDE LM M166ST NOTEBOOK FOR ONLY $2899!

DELL® LATITUDE® LM M166ST
166MHz PENTIUM® PROCESSOR
WITH MMX™ TECHNOLOGY

- ★ **12.1" SVGA Active Matrix Display**
- ★ **16MB EDO RAM (72MB Max)**
- 256KB L2 Pipeline Burst Cache
- ★ **1.6GB Hard Drive**
- Options Bay accepts 20X Max[00] Variable CD-ROM, 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery
- ★ **PCI Bus with 128-bit Graphics Accelerator with 64K Colors**
- Integrated 16-bit Stereo Sound
- Smart Lithium Ion Battery
- ★ **Microsoft® Office 97 Small Business Edition**
- Microsoft® Windows® 95
- IrDA 1.0 Standard Compliant
- Touchpad/Under 7 Pounds*
- Extendable 1 Year Warranty†
- ★ *Upgrade to 40MB EDO RAM, add $299.*
- ★ *Upgrade to a 2.1GB Hard Drive, add $149.*
- ★ *2nd Lithium Ion Battery, add $199.*
- ★ *NEW 56K Capable**x2 Modem, add $149.*

$2899

Business Lease◊: $105/Mo.
Order Code #800140

Sure. Power comes at a price. Fortunately, it's one you can afford. Because we've lowered the price on our award-winning, powerhouse notebook, the Latitude LM M166ST. You see, we started out with the 166MHz Intel® Mobile Pentium® processor with MMX™ technology with a 32KB internal cache. Then we added an improved 128-bit graphics accelerator for blazing fast video, 64K color depth and true multimedia functionality. The result? Well, *Windows Magazine* tested an LM M166ST configuration†† and puts it subtly in their August '97 issue: "The fastest notebook we've ever tested with every option you could ever want." Not bad for a notebook line starting at under $3000. And you get all this from the only notebook manufacturer to receive an "A" grade based on *PC Magazine*'s July '97 Service and Reliability Readers' Survey results. So go ahead and give us a call. Because while the performance puts the LM M166ST over the top, the price brings it well within reach.

DELL®

TO ORDER TOLL-FREE

800-847-4118

TO ORDER ONLINE

www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03297

MMX™ intel inside pentium PROCESSOR

HOW MANY COMPANIES WILL LET YOU RETURN YOUR COMPUTER WHEN IT BECOMES OBSOLETE?

INTRODUCING DELL'S PERSONAL LEASE WHICH PROTECTS YOU AGAINST OBSOLESCENCE. CALL NOW FOR MORE DETAILS.

***NEW* DELL DIMENSION® XPS D266**

266MHz PENTIUM® II PROCESSOR FEATURING MMX™ TECHNOLOGY

- 32MB SDRAM Memory
- 512KB Integrated L2 Cache
- *NEW* 6.4GB Ultra ATA Hard Drive with 512KB Cache (9.5ms)
- 1000TX Trinitron® Monitor (15.9" v.i.s., .26dp.)
- *NEW* STB Velocity 4MB AGP Video Card*
- 24X Max§ Variable CD-ROM Drive
- Integrated Yamaha Wavetable Sound
- Altec Lansing ACS-90 Speakers
- 56K Capable** U.S. Robotics x2 WinModem
- Microsoft® Office 97 Small Business Edition plus Encarta 97
- MS Windows® 95/MS IntelliMouse
- 3 Year Limited Warranty† with 1 Year On-site^Δ Service

Personal Lease

$119/Mo.◊

or buy today for $2679

Order Code #500910

A little overwhelmed by the rate of technology change? Suffering from the "fear of computer commitment?" Well, you can breathe easier now. Because in addition to our business lease program, Dell is now offering computer leasing directly to consumers on all our Dell Dimension and Latitude LM systems. With an over-the-phone approval process that typically takes just minutes and low monthly payments, you can get the latest technology on your desk in a snap.

But here's a real advantage: At the end of the 24-month lease period, you can trade your system in and lease a new one!† This practically guarantees you'll never be stuck with obsolete technology again. And in the unlikely event you need service on your Dell Dimension system, it's covered by our service program for the entire lease term. Plus, as added flexibility, you have the option to buy your leased system outright at the end of the lease term, or even extend the plan for up to six months.† So call us now for more details.

◊Amount of monthly lease payment, based on 24-month lease from Dell Financial Services L.P., an independent entity; amount due prior to delivery: $238 (amounts exclude taxes which may vary; for example, Hartford City, IN fees $5.95); no security deposit required; subject to credit approval and availability. Lease terms subject to change. †Some conditions apply.

***Product, as configured, will ship by October 20. Please call for updated shipment information.**

MMX™ intel inside pentium® II PROCESSOR

DELL®

TO ORDER TOLL-FREE

800-753-9974

TO ORDER ONLINE

www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03296